PERICOLITIS.

BY

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PERICOLITIS has its simplest manifestation in the local peritonitis which accompanies the firm impaction of a faecal mass in the colon. The bowel is congested and granular, and peritoneal exudate surrounds the area.

In lesions of the mucous membrane of the colon causing infection through the lymphatics the adjoining mesentery becomes thickened and shortened from chronic inflammation, a feature met with opposite the diseased area in chronic appendicitis, which causes kinking of the appendix at its middle or proximal part.

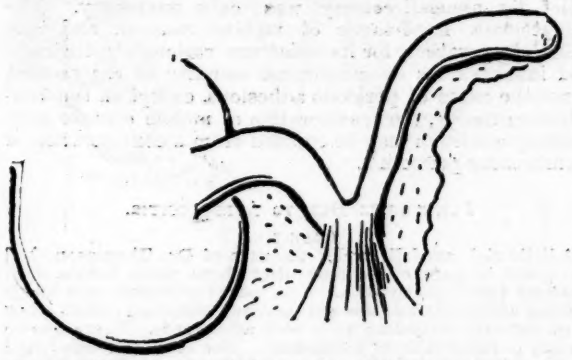

Fig. 1.—Effect of chronic inflammation of the mesentery of the appendix—mesoappendicitis.

It cannot be doubted that infection is a factor of the local exudate around the faecal mass in the one case and of the contracting scar in the mesoappendix in the other case. They are but simple instances of pericolitis, which, in some of its more complicated forms, I propose to consider in relation to the kidney, appendix, and gall bladder.

The correct interpretation of vague pains and tenderness in the right lumbar and iliac regions may be very difficult, especially in the female; and my own experience of the important part played by pericolic adhesions is in accord with that of some recent observers. In nephroptosis we have an opposite extreme to the simple illustrations already given, yet pericolic inflammation and adhesions may result from wandering kidney and demand treatment.

PERICOLITIS FROM WANDERING KIDNEY.

Wandering kidney sometimes causes colitis. This is primarily mechanical, from local irritation, from displacement and distension of the ascending colon, and from the strain on the colic vessels acting more readily upon the veins than on the arteries, and so inducing passive congestion. In addition, the colitis causes infective inflammation of the pericolic tissues. Thus a vicious circle is induced, mechanical on the one hand, infective on the other; the caecum and ascending colon being in lymphatic connexion with the right kidney, so that bacteria and toxins can pass from the colon to the kidney.[1] Whether as a result of mechanically-induced nephritis, or by infection from the colon, the fact remains that wandering kidneys requiring operation always show distinct adhesions on the true capsule with whitish areas of fibrosis at their attachments. It is the surrounding capsule which is really loose, even permitting the kidney to pass with it across the middle line of the abdomen.[2 3] Such patients are usually thin, but as the fatty capsule of the kidney is often well marked, the view that emaciation is caused by toxins from the bowel acting upon the fat would seem to be untenable.

In more advanced cases the intraperitoneal pericolitis may be so distinct as to prove a dominating factor in the causation of symptoms, as in the following cases:

CASE I.—*Attacks Resembling Appendicitis.*

Mrs. C. had suffered from "bilious attacks" for years, beginning with severe headaches and accompanied by distension, nausea, anorexia, and occasional vomiting. They lasted for two days, and she applied hot-water bottles to the abdomen to obtain ease, which was associated with a sensation of something moving before she was relieved. A month before I saw her with Dr. Lees she had a severe attack of pain and tenderness in the right iliac fossa, with fullness and indefinite swelling, and she had a recurrence with slight fever subsequently. In the earlier attacks the pain was epigastric; in the later ones in the region of the appendix and like colic.

The right kidney was freely mobile, with tenderness, gurgling, and indefinite resistance in the caecal region. In March, 1911, a long ilio-lumbar incision was made and the muscles separated. The middle of the ascending colon was adherent to the parietal peritoneum, and beset with numerous bands which required division with scissors, with intervening cystic spaces containing clear fluid. The caecum was dependent in the pelvis, dilated and hypertrophied. The appendix was small and apparently normal, and the other organs were healthy. The kidney was fixed by the writer's method,[4] and the patient has been cured of her attacks (Fig. 2).

Fig. 2.—Pericolitis from wandering kidney with cystic spaces containing clear fluid.

CASE II.

A woman, under the care of Dr. Powell, first noticed severe pain in the right side fourteen months before, with a history of previous indigestion. The pain passed to the right shoulder-blade and was followed by tenderness in the right side. Urination had been frequent for a year, and sometimes the patient detected a swelling.

The right kidney was fixed after excising some fatty capsule. Strong pericolic adhesions required division, also some between the ascending and transverse colon; the caecum was low down in the pelvis. With the patient on her side the whole of the fatty capsule with its fascia dropped away from the parietes, together with the kidney, leaving an exceptionally large retroperitoneal space reaching to the middle line mesially and down to the false pelvis below (Fig. 3).

CASE III.—*Wandering Kidney fixed with only Temporary Relief. Subsequent Exploration and Treatment of Pericolitis.*

I was asked to see a lady with Dr. Roberts in July last with wandering kidney dating from confinement many years previously. She complained of a dragging feeling in the loin aggravated by two recent falls, with abdominal tenderness; and on one occasion, when in London, she experienced a sensation of "something turning over inside." Belts had not given relief.

In September her kidney was fixed, but soon after her return home the abdominal pain, tenderness, and attacks of faintness described as "qualms" returned. Consequently I explored the right loin in November through a long sphincter incision. The kidney was absolutely fixed, but there was very obvious pericolitis, the ascending and transverse colon being bound together; a special tongue of mesentery of the ascending colon was adherent to the peritoneum of the loin, and beneath this the ascending colon towards its upper part was deeply angulated and constricted by strong pericolic bands with intervening empty spaces. It required time and patience to restore the colon to natural conditions, and the adherent portion of the mesentery of the ascending colon had to be cut away except a piece above which was stitched to the under surface of the liver to support the hepatic flexure.

Very soon after the operation she began to lose the "qualms," abdominal pain, and tenderness, the bowels acted more freely than before, and she is at the present time restored to health.

A case of nephritis with granular casts which appeared due to chronic appendicitis is recorded by Pilcher, pericolic

adhesions and recent perinephritis being present; also the case of a constipated patient who had passed blood and been advised to have her kidney removed, but whose renal symptoms cleared up after the removal of a chronically inflamed appendix, and the release of the caecum and ascending colon from pericolic bands.

Membranous Pericolitis, with Symptoms of Appendicitis.

The association of membranous pericolitis, with symptoms of chronic appendicitis has been graphically described by Lewis S. Pilcher.[11] The bands may be thin and veil-like, membranous, or as firm sheets of fibrous tissue binding down the caecum and appendix. They tend to restrict peristalsis and to angulate the colon and appendix (Figs. 9, 10, 11, 12, 13). They must have been observed repeatedly, although Jackson (1908) has given us a clear description.[5] In most of the cases of pericolitis described by Pilcher the appendix had been removed previously, either during an acute attack or for supposed chronic appendicitis. The persistence of symptoms in the right iliac region and loin led to further operation, and after dealing with the pericolic adhesions the patients were either cured or greatly relieved.

Parker Syms[6] described a case diagnosed as appendicitis which presented little sign of it at operation, yet the ascending colon was enveloped in a typical Jackson's membrane, spreading from the parietes over the colon, which moved freely beneath it.

Lane has described similar adhesions between the outer wall of the colon and the parietes in connexion with chronic constipation, and regards them as hypertrophy of the membranous anchors of the bowel, compensating for the strain of prolonged ptosis but also interfering with peristalsis.[7] As regards intestinal stasis, he submits the argument that inflammation of the appendix is not necessarily the primary condition; that bands of adhesions may form about the ascending colon and hepatic flexure as a result of constipation and the erect posture.[8] Charles Mayo suggests that in some cases these bands and films may be due to late rotation of the bowel and descent of the caecum from its hepatic position after the formation of the parietal portion of the peritoneal cavity in the fetus.[9] The reduplication of the ascending colon, which one occasionally meets with surgically, supports this view in certain instances. Generally speaking, the opinion of Gerster[10] and Pilcher,[11] that they are the result of oft-repeated or long-continued mild infections of the peritoneal covering of the caecum and appendix, is no doubt correct. Moreover, it should be noted that although the initial appendical attack may subside completely, the accompanying pericolitis may persist in the form of fibrous bands.

Symptoms and Diagnosis.

The symptoms of pericolic membranes have a great similarity, and resemble closely those of chronic appendicitis. Discomfort and pain are complained of in the right iliac region, with tenderness on deep pressure. These vary with diet and exercise, and colicky cramps occur which may be felt and even seen. Caecal constipation is caused by the defective peristalsis and mechanical impediment, and pain is caused by muscular spasm. This faecal stasis, where absorption is normally active, causes symptoms of autointoxication. The pain is often referred to the stomach, and secondary digestive disturbances are common.

The diagnostic value of *x* rays may be great in determining the position and size of the caecum and any angulation of the colon. Twelve hours after a bismuth meal, given after a thorough clearance of the bowels, supplemented if necessary by an enema of bismuth emulsion shortly before the examination, the colon and caecum may be examined, the disposition of the appendix may be seen, and by repetition at intervals one can determine approximately the relative stasis in the caecum. But operation will alone determine the conditions with precision.

Operation.

The incision will necessarily be such as to expose the parts more freely than has been customary. It may be a vertical incision towards the outer part of the right rectus, as advised by Pilcher, or the long ileo-lumbar gridiron incision, with separation of the musculature, which I have employed. The bands are then divided with scalpel or scissors until the bowel is set free, and the bare parts are covered over with peritoneum. Generally the bands are divided near the bowel, and are then utilized to cover the bare parietal areas by anchoring them behind the bowel with a few stitches, any free visceral ends of the adhesions being sutured to the bowel in front, close to their attachment. The incision should be long enough to expose the terminal ileum, caecum, and the whole of the ascending colon; and the history of a previous removal of the appendix should not preclude such an exploration.

In an examination of the after-histories of 100 cases operated on for chronic appendicitis, E. MacD. Stanton[12] found that 36 were not cured, either from erroneous diagnosis, such as the non-recognition of gall bladder or renal conditions, or from some factor not appreciated at first. Of these he states that mobile caecum accounted for the greatest number, 16 per cent., and in them the relief by appendicectomy was only temporary. The symptomatic importance of mobile caecum, and the value of operations for its relief, are variously estimated; and inasmuch as uncomplicated mobility of the caecum is not the cause of pericolic adhesions, except on the constipation theory, the consideration of mobile caecum as a primary condition may be omitted from a consideration of membranous pericolitis.

Pericolitis Due to Appendicitis.

Case I.

A little girl, aged 11, under the care of Dr. Thompson, had an attack of pain of gradual onset three years before, with sickness and slight pyrexia. Five weeks previously she had a sudden attack of pain, was not sick, and remained in bed a few days but without feeling quite well afterwards. There was no history of indigestion or biliousness. The appendix was found to the outer side of the colon, pointing upwards, and there were adhesions between it and the outer side of the colon, also pericolic adhesions joining the ascending and transverse colon (Fig. 4).

Case II.

In this case there had been pain settling in the appendix region, with tenderness, rigidity, and initial sickness. The appendix was firmly bound down behind the caecum, and firm bands united the head of the caecum to the ileum a few inches away from the ileo-caecal junction, so that a free loop of ileum was suspended thereby (Fig. 5).

Case III.—*Appendicectomy without Relief; Pericolitis Discovered at Subsequent Operation.*

A girl of 15 was seen in July last with Dr. Harvey with symptoms of appendicitis. Pain of three months' duration, was very severe at times though sometimes absent; referred to the right loin, thigh, and iliac region, where there was tenderness; the pulse was quick with slight pyrexia. The appendix was removed without drainage. On returning home the pain recurred in the right loin and towards the back. It was very severe at times, and worse when up and about. I saw her again in October. Nothing could be felt in the abdomen, and I suspected pericolitis. *X*-ray photographs after bismuth meals revealed very distinct stasis in the caecum, bismuth remaining therein unaltered from twelve to seventeen hours, and still present after forty hours. A long ilio-lumbar sphincter incision was therefore made through the former scar. The caecum was dilated, and, together with the ascending and transverse colon, was bound down by pericolic films, including omental bands which were attached to the outer part of the colon, the head of the caecum, and the scar (appearances, Fig. 6; skiagrams, Figs. 7 and 8).

Case IV.—*Pericolitis from an Abnormally Placed Appendix, causing Attacks of Biliary Colic with Jaundice.*

A lad of 20 was seen with Dr. Lucas in 1908 with a history of sudden pain at the navel two years previously, followed by attacks resembling gall-stone colic, with jaundice, marked flatulence and vomiting, and so severe that he used to double himself up over the back of a chair. The gall bladder and cystic duct were buried in firm adhesions, separable with difficulty. No stone could be found, the gall bladder was drained, and he passed several mucous stools for the first five days after operation. Seven months after he had an attack of general peritonitis, when its cause and that of the previous pericolitis was found in a gangrenous appendix that passed almost vertically upwards behind the caecum and ascending colon, the tip being apposed to the lower border of the duodenum close to the common bile duct (Fig. 14).

Case V.—*Pericolitis from Abnormally Placed Appendix (? Developmental) and Symptoms of Gastric Ulcer.*

A woman was referred to me by my colleague, Dr. Nixon, with a view to gastro-enterostomy if the indications were obvious. The history was that of pain after food ever since she was a girl, with much flatulence and occasional vomiting and haematemesis. There was localized tenderness in the epigastrium to the left of the middle line. Exploration revealed

a tortuous ascending colon, with adhesions between the bends and firm ones uniting the ascending and transverse colon together. The appendix, which was very long, passed up under a filamentous covering in the ascending mesocolon to the hepatic flexure, where it turned to the left, its extremity lying for some distance in the gastro-colic omentum, and the gall bladder was adherent at this site. Gastro-enterostomy was not indicated, the stomach was normal, and the long appendix was removed after dividing the filamentous pericolic covering (Fig. 15).

CASE VI.—*Tuberculous Pericolitis.*

A little boy was seen recently who gave a history of a few previous attacks of appendicitis. The appendix was accordingly removed, and on examination of the region a hard mass of tuberculous glands could be felt behind and to the outer side of the caecum and in the lower part of the mesocolon, whence they were excised. Professor Walker Hall reported the append. to be the seat of early tuberculosis (Fig. 16).

Actinomycosis.

In the later stages of actinomycosis of the appendix, which is not at all uncommon, the pericolic tissues become infiltrated and sinuses form in the loin, prior to

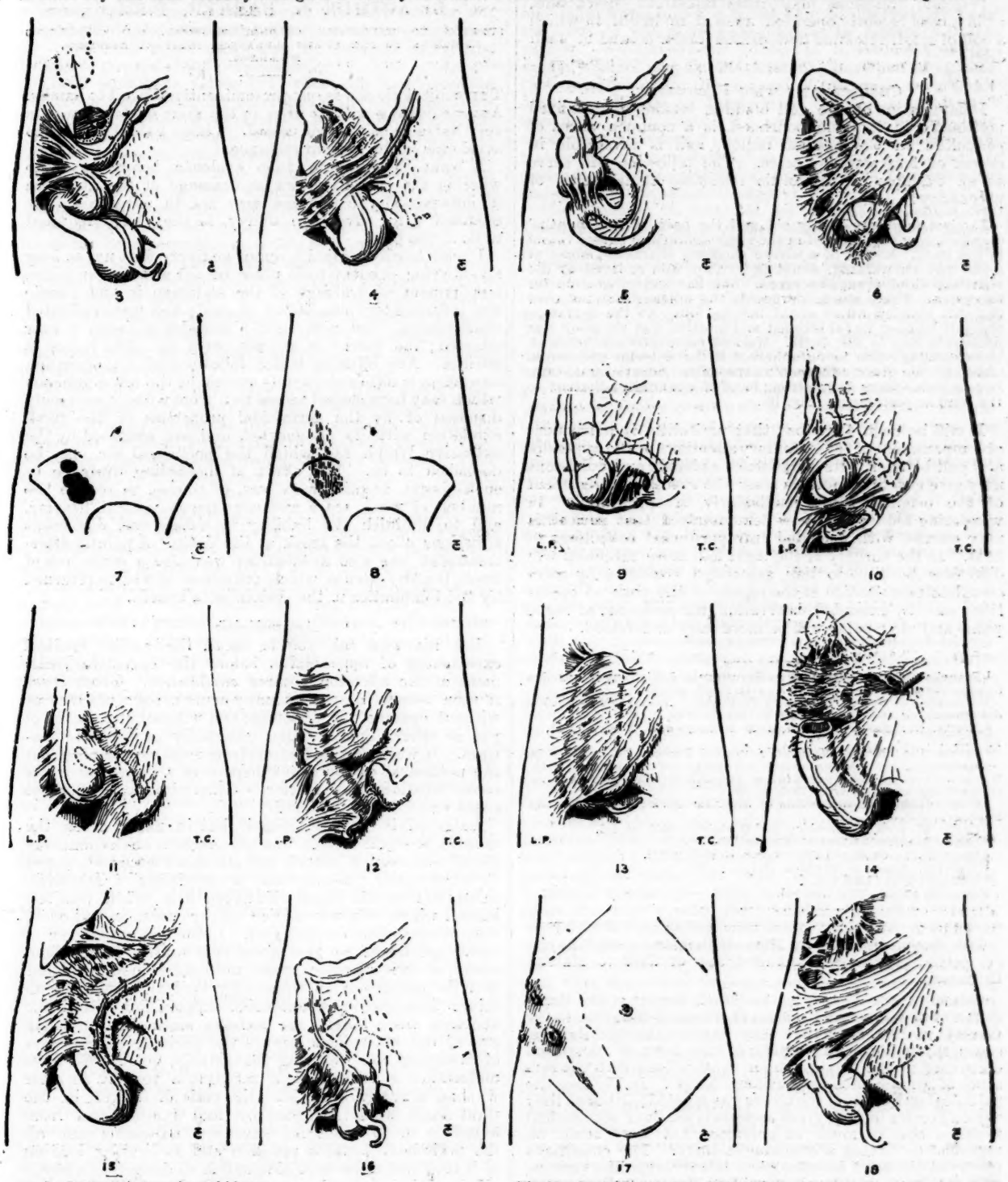

Fig. 3.—Pericolitis from loose kidney.
Fig. 4.—Pericolitis from appendicitis.
Fig. 5.—Ileum fixed by pericolic adhesions.
Fig. 6.—Pericolitis causing persistent symptoms after appendicectomy.
Fig. 7.—Skiagram of previous case seventeen hours after bismuth meal, similar to that taken twelve hours after bismuth.
Fig. 8.—Skiagram showing bismuth still in caecum seventy hours after bismuth meal.
Fig. 9.—Appendicular adhesions. (Pilcher.)
Fig. 10.—Pericolic films. (Pilcher.)
Fig. 11.—Perityphlitic films. (Pilcher.)
Fig. 12.—Pericolic films binding ascending and transverse colon together. (Pilcher.)
Fig. 13.—Jackson's membrane and double-barrel gun arrangement. (Pilcher.)
Fig. 14.—Pericolitis and jaundice from abnormally placed appendix.
Fig. 15.—Pericolitis from abnormally placed appendix, with symptoms of gastric ulcer.
Fig. 16.—Tuberculous pericolitis.
Fig. 17.—Pericolic actinomycosis.
Fig. 18.—Pericolitis from cholecystitis of pregnancy.

the involvement of the hepatic region and subsequent death of the patient (Fig. 17).

Pins in the appendix have been noted by many surgeons, and may cause pericolitis. In a collection of 63 published cases R. H. Fowler refers to a case of W. W. Keen, in which the tip of the appendix was solidly incorporated in the bladder. At the age of 7 the patient had dysuria, and a pin, which he believed he had swallowed, was removed from the urethra.[13]

Pericolic adhesions may cause intestinal obstruction, as in a case recently operated upon at midnight, in which a coil of small intestine had passed under a band of such origin.

CHOLECYSTITIS WITH PERICOLITIS.

Inflammation of the gall bladder, leading to localized peritonitis in its neighbourhood, is a common cause of pericolitis in the hepatic region, and is invariable in severe or long-standing cases. The following will serve as an example of pericolitis following cholecystitis of pregnancy:

The last child was 7 years old, and the pain, of five months' duration, was first noticed in the epigastrium and passed round to the back. It was of a severe shooting character, worse at night and on walking, doubling her up, and relieved by the vomiting which always occurred. She had had indigestion for two years. There was tenderness in the epigastrium, not over the gall bladder, which could not be felt. At the operation the gall bladder was thickened and mottled, but no stone was present in it or in the ducts. Marked pericolitis was present, the ascending colon being adherent to the anterior abdominal wall and the liver adherent to the gastro-hepatic omentum. In particular there was a strong band of omentum adherent to the lumbar peritoneum (Fig. 18).

It will be seen, therefore, that pericolitis is a frequent accompaniment of inflammatory affections of the appendix and gall bladder. Its persistence as bands and adhesions may give rise to symptoms after the successful treatment of the original focus, particularly in appendicitis. In wandering kidney it is now demonstrated that pericolitis may coexist with encysted intraperitoneal collections of fluid. In the surgery of the right loin more attention will doubtless be paid to this associated condition by more complete examination of the region at the time of operation; and, by extended observation, the pathology of vague pains and after-pains will be more fully understood.

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THE bequests made by Miss Alphonsine Sarah Jarry, of Settle, Yorkshire, included one of £600 to Halifax Infirmary.

WOLBACH AND TODD, in the Third Report of the Expedition of the Liverpool School of Tropical Medicine to the Gambia in 1911, state that they have established the presence throughout the Gambia of that form of ulceration occurring in the tropics which is associated with the presence of spirochaetes and fusiform bacilli. In 17 cases the pathological history of the ulcers was studied; although they varied greatly in their gross appearances, their histological features had so much in common that they could be regarded as having a common etiology. The conditions observed excluded as etiological factors, syphilis, varices, acid-fast bacteria, blastomyces, Leishmania, actinomyces, and the streptothrices. The presence of spirochaetes in nine of their cases lends support to the view that they are the cause of the process. These spirochaetes corresponded accurately to the parasites described by v. Prowazek, Keysselitz and Mayer, Balfour, and other authors, and named by v. Prowazek *Spirochaeta schaudinni*. Subcutaneous inoculations made by the authors into white rats gave negative results.

A Lecture
ON
SOME POINTS ABOUT DRAINAGE OF THE ABDOMEN UNDER VARIOUS CONDITIONS OF INFLAMMATION.*

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THE subject chosen is one pre-eminently difficult to handle. Anyone dealing with it even in the most detached way is very liable to be misunderstood. I hope I shall be able to avoid this in the present instance.

I want to speculate from evidence before us as to whether the current views on drainage of the abdomen in inflammatory conditions may not in some cases be modified with advantage to-day, as they have required to be in the past.

I need hardly remind a senior audience that not so long ago stirring debates took place in our societies as to the employment of drainage of the abdomen in such simple non-inflammatory conditions as early and uncomplicated ovariotomies. Yet now such a measure is rarely if ever adopted; the wound is at once sewn up. The reason is obvious. Any effusion which follows such an operation nowadays is either absolutely aseptic or the few organisms which may have gained access to it from without are easily disposed of by the germicidal properties of the fresh exudation with its phagocytes, and are absorbed by the extensive lymph sac which the peritoneal sac may be described to be. The effect of discarding drainage in such simple aseptic cases was, of course, to reduce the number of weak scars and consequent ventral herniae, and to diminish the liability to subsequent dangerous adhesions about the track of the drain. A painful after-treatment was also avoided, as was also a great loss of fresh healthy serum which otherwise would be returned by the lymphatics to the system with benefit.

Appendicitis.

Let me now ask you to recall the earlier medical experiences of appendicitis before the operative treatment of the affection became established. From these it soon became clear that many acute cases could recover without opening the abdomen, and without any escape of pus or other effusion either externally or into the intestines. It was a fair deduction from such experiences that the peritoneal cavity could dispose of a large amount of septic inflammatory matter. Otherwise none of these cases could have recovered.

Later on it was recognized that in many cases the amount of septic matter was too great to be left entirely to the resources of nature, and abscesses were encouraged to burst under fomentations, or operations were undertaken to evacuate them. But even here much was left behind which was not carried off by drainage, and could only be destroyed on the spot. From our experience of these operations we now know that ventral herniae and kinks of the intestine were not uncommon sequelae. But the operations on these very ventral herniae themselves following upon extensive suppuration within the abdomen have taught us, perhaps, more than anything else of the marvellous powers the peritoneum possesses of arresting and repairing the damage done. We have undertaken a radical cure, perhaps, a year or so after we had actually seen all the coils of bowel in the right flank matted together by foul lymph, and have found in many cases no traces of adhesions and all the peritoneal surfaces polished and as healthy looking as if they had never been involved in so dangerous a septic inflammation. Another point must have struck many surgeons after making long incisions to evacuate appendical abscesses. The ends of the incisions have been stitched up, leaving a drain in the centre, and we have seen the ends heal practically by first intention, in spite of being bathed in pus under a fomentation for days in many cases.

* Delivered at the Medical Graduates' College.

From all this it has seemed to many surgeons, both at home and abroad, that perhaps we have been too wholesale in routine drainage when dealing with inflamed appendices, and that more discrimination is desirable. In other words that, after the removal of the inflamed organ and the septic products around it as far as possible by careful mopping, we might perhaps with advantage in some cases stitch up the abdominal opening after cleaning its edges, and obtain primary union with all its advantages. Here, of course, some traces of the septic matter would be left behind within the abdomen; but this, as we have seen from our experience noted above, can be disposed of by the defensive powers of the peritoneum.

Those who have taken this view can now point to numerous cases of acute epityphlitis in which inflamed and even gangrenous appendices surrounded by septic effusion have been dealt with and which have yet healed *per primam* after careful suture. In some of these cases the septic fluid from within has obviously flowed over the edges of the wound during the operative manipulations, and the inflamed lymph-covered organ has perhaps been in contact with them, and yet the result has been as perfect as if this had not been the case. Of course there remain a large number of cases in which thorough and prolonged drainage appears absolutely called for by common consent. This is our great difficulty, only to be overcome by experience. But it appears equally obvious that there are many in which drainage can be dispensed with to the great advantage of the patient, immediate and remote.

So far, then, as can be seen from clinical and experimental observation, a very considerable amount of septic matter is tolerated by the peritoneal surfaces, and can be prevented by them from doing irremediable injury when not in too great amount or overpoweringly virulent. That the virulence of the particular infection affects the issue is, of course, generally known. But that this general knowledge does not sufficiently affect our practice is what I am trying to bring out. We must all realize that every case of acute appendicitis is not the same affection, though the same organ is attacked in all. Let us take examples.

One patient is seized, and within a few hours has all the symptoms of profound toxaemia, which may be present to a degree almost precluding hope of recovery, with or without operation. In his case, if an operation is done, but little is found but a perforated vermiform appendix and a small quantity of a thin, greasy exudation from all the deeply injected peritoneal surfaces in view, but without a trace of plastic lymph. The intestines are distended, and more or less paresed. All we can do here, if we operate at all, is to remove the appendix, and with it a source of further infection. But the toxic infection has got a firm hold, and the natural forces alone can arrest it, aided, perhaps, by measures to be alluded to presently.

Another patient has an apparently similar attack; the same time has elapsed, but the general condition in this case is fairly good; there are, in other words, no marked symptoms of toxaemia, or very few. But if we open the abdomen we find what might at first sight be taken for a worse local condition. There is an inflamed appendix, as in the first instance, and the changes around it look more severe. But they are localized. There is much plastic lymph about, and the intestines in view are little, if at all, injected, paresed, or dilated. These are the cases which used to, and still do, get well with and sometimes without operation.

Now, these two conditions belong to entirely different categories. They are almost different diseases. In the first death will frequently follow, in spite of any operation which can be done for the local catastrophe. The general infection is too profound. The initial dose of poison has multiplied and saturated the whole system, either because the micrococcal strain was more than usually virulent, or because of a low standard of resistance in the individual.

In the second condition the virulence of the cocci is lower, is controlled by the greater vitality of the patient, and their effects are expended locally. It is unnecessary to refer to the particular cocci concerned in both processes. They may possibly be the same morphologically, but of a different strain as regards virulence.

Such differences in the cases we have to treat are seen daily. Is it rational that they should all be dealt with in the same stereotyped way when we come to operate on them? I think not, and an ever-increasing number of operators are of the same opinion, to judge from the literature of appendicitis, both home and foreign. It must not be forgotten, too, that there are many degrees of severity between the two extremes just mentioned. And herein lies our difficulty—a difficulty which has led to a too uniform method of procedure. But we are growing every day in knowledge of the vital processes in action, and ought to be, and are, better able to discriminate as to the aims of operative procedure to be applied to each variety. We have come so far as to realize that the milder attacks may be left until they have passed off, and then operated on for the removal of the appendix without drainage. We are coming to know what cases of suppuration must be drained. We are getting to believe that some cases with actual pus formation need not be drained and acting on this belief, have obtained results which contrast very favourably with those treated by prolonged and often troublesome drainage.

The question is, Can we, by careful clinical study, determine during an operation whether an acute appendicitis ought to be drained or not? I think such a thing is possible. Let us take a case or two by way of illustration. It is quite clear that in all so-called "interval cases," or *appendicite à froid*, no drainage is required. We close the wound after removal of the organ, and expect and obtain primary union. But on a recently inflamed organ we often find much discoloured and foul lymph, with adhesions to surrounding parts, and not infrequently more or less turbid fluid. Can we venture in such a case to close our wound after removal of the organ and careful mopping with gauze, and dispense altogether with drainage? Experience shows that we certainly can in a large proportion of cases, and my own lists show that this practice is increasingly common and successful. And yet, when we come to think of it, these conditions are septic, and it can hardly be claimed that the removal of the inflamed organ can be accomplished without more or less contamination of our incision edges. Why, then, do these adhere and unite faultlessly, as they certainly do in many cases? This can be explained in several ways: Either the inflammatory exudation on and around the vermiform appendix was practically sterile, or, if not, the amount of organisms already inhibited by the action of effused serum was not enough to overpower the active tissue cells of the freshly made wound and the plastic lymph which repairs it. In some cases we have found that the effused fluid in such cases poured out in response to the infection from the inflamed vermiform appendix is actually sterile. No organisms have been grown from it on the ordinary culture media. The appendix itself was undoubtedly infective, but the serous fluid effused around it was probably prophylactic, as we know it to be elsewhere, and inhibited the development of the organisms. It was not to be wondered at that here the wounds healed primarily. But what about other cases where there has been a small abscess round a putrid appendix? Here, too, we have had in some cases the best results from immediate closure of the wound. We must suppose, then, that though some of the pus did undoubtedly reach the edges of the wound, the same inhibiting forces had affected the cocci in it, and that they were overpowered by the patient's own living cells in the wound, just as part of a wound which is being drained, and is consequently covered by pus, may heal up *per primam*.

In some few instances we have underestimated the chances of infection, and some suppuration, usually very slight, has taken place in our closed wound. But it is notable that the peritoneal conditions have in no case been unfavourably influenced by this. When the wound has shown blemishes it has apparently been due to the accumulation between the skin and the deeper stitches of some blood clot which has proved a suitable soil for the growth of organisms. Usually the escape of a little turbid serum through the stitch holes or of broken-down blood clot from a corner of the wound has been followed by sound union, as though nothing had happened. In some very few cases the insertion of a subcutaneous drain has been necessary, and a stitch or two have worked out. But in the end union has taken place with apparently no more loss of time than had the wound been drained from

the first. Such blemishes will be inevitable occasionally until we have accumulated experience enough to know how far we may go with non-drainage, and what cases must have a drain from the first. So long as the intra-peritoneal conditions are not unfavourably influenced by non-drainage, the superficial processes are of secondary importance. Of course, if we follow the routine of draining all inflammatory intra-abdominal processes without exception, we escape the need of discrimination. But in this case there will be many more weak scars and ventral herniae to be dealt with subsequently, and probably more dangers from adhesions and infection from without.

If we endeavour to lay down formulae for our general guidance in such cases, they would be somewhat as follows: Given a case in which on opening the abdomen an inflamed vermiform appendix is found, around which there is a moderate amount of obviously plastic lymph shutting off the process, whether it be suppurative or not, and if outside this the abdomen contain a certain amount of clear effusion and the intestines in view are normal in appearance, if at the same time the patient's condition is good, his colour fresh and his pulse moderate in frequency and in quality, and if the offending organ can be removed with comparative ease, I am inclined to close the wound carefully without drainage. The clear fluid around the immediate area of trouble is probably prophylactic, and will often be found to be sterile.

But if, on the other hand, on opening the abdomen, a rotting or inflamed appendix be found with little or no plastic lymph anywhere, and the intestines in view are red, injected, and dilated from paresis and covered by a greasy exudation or immersed in a thin ichorous, discoloured effusion; and if this picture is associated with feeble, rapid pulse, great asthenia, loss of colour, perhaps frequent vomiting—in short, with clear signs of toxaemia—it is better to drain freely. The cocci in this case are particularly virulent and have led to a completely aplastic peritonitis, with toxaemia and consequent loss of general vitality. All that we can do here is to remove the exciting cause in the form of the peccant appendix (if this can be done without prolonged operation) and keep the wound open in the hope that some of the toxins, at all events, may escape from the peritoneal cavity by drainage. We are dealing here with a profound general poisoning, and the prognosis is extremely grave. Such cases must be spared from all prolonged exposure to the depressing effects of manipulations and the anaesthetic. In most all search for the appendix should be left for a subsequent operation unless it present itself at once. From evidence before us it appears more than probable that the effect of chloroform plays a large part in the general depression.

While writing the above I have seen 7 cases which illustrate the varieties alluded to on which I have operated with the last few days:

1. A mild quiescent case; appendix removed; no drainage.
2. A mild active case; appendix removed; no drainage.
3. A severe general case with much effused aplastic fluid in the right flank reaching to the diaphragm and producing cough, but with only moderate toxaemia and a relatively fair pulse; appendix removed; free drainage.
4. Severe inflammation with sloughing appendix and abscess, but general condition fairly good — organ removed; free drainage.
5. Severe attack with localized abscess and appendix imbedded in wall of caecum. Temperature high. Organ dissected out; drainage.
6. Intense inflammation; appendix imbedded in caecal wall and acute enlargement of mesenteric glands in the angle between the ileum and colon; caput coli and last two inches of ileum solid with oedema; appendix removed, no drainage. The patient had incipient pneumonia with much herpes on cheek and lips. Temperature very high before operation.
7. Intense inflammation of distal third of appendix with pus just about to burst through its serous coverings in many white patches; vascular adhesions all round; organ removed; wound closed without drain.

All 7 cases recovered. Of the 6 with fresh acute inflammation 3 were drained, and are practically quite well; 3 were stitched up without any drain, 2 of these healed without a flaw, one showed a perfectly healed skin incision with a little turbid serum from two stitch holes. A few days later: The wound is now dry, and has all the signs of primary union, being firm and soft. One of the cases (No. 4) in which drainage was employed would, I now think, have done equally well or better without drainage. Not so long ago all, except the first, would have been treated with drainage, and would probably ultimately have developed ventral herniae.

Perforation of Stomach and Duodenum.

This same question—whether we ought to drain or not—confronts us after operations for several other acute inflammatory conditions within the abdomen. Nowhere is it more momentous than after perforation of the stomach or duodenum. Here after we have closed the perforation it is difficult in some cases to say whether drainage should follow or not. I have treated many in both ways, and have gained the impression that those whose wounds have been closed at once have suffered less from the catastrophe itself and the operation than those whose wounds have been drained. I do not think I have ever regretted not having drained. I have often concluded that drainage had been of no use if not actually injurious. One thing is, I think, pretty clear, namely, that if a drain be used the escape of fluid is only from the abdomen in the immediate neighbourhood of our wound. No effectual means of draining the abdomen have yet been devised. We ask ourselves, then, Is it worth while to drain an area not larger than could be covered by the closed hand, and probably for not longer than 24 hours? For by this time the field of operation will be shut off from the rest of the abdomen by plastic exudation. Indeed, I have often speculated whether, in some cases at least, our drain has not prevented the completion of this plastic process, and interfered with the apposition and union of the damaged viscus with the parietal peritoneum and other parts around. And if an aplastic peritonitis is the sequel to a perforation the fluid effused will gravitate into the flanks, and here it could not be withdrawn by any drain in the epigastric incision. Fresh wounds in the flanks might be made, but they are, as a rule, unsatisfactory in these cases. Indeed, a patient with aplastic diffuse peritonitis after perforation is in a desperate condition from which no amount of drainage will save him, and each fresh opening in the abdomen weakens him. His own powers of resistance alone can save him. I have seen collections in the flanks and pelvis appear and disappear in these cases without incisions.

From all these considerations I have been led for several years considerably to modify some older views about drainage in such cases. In many of them after careful mopping of the infected surfaces, however extensive, the wound in the abdominal wall has been completely closed in many cases. And I cannot recall one in which there has been reason to regret the practice. There is good ground for believing, as already stated, that fresh serum in the peritoneum and other serous cavities is germicidal, and further, dilutes the toxins produced by the bacteria. It is effused rapidly, and quickly absorbed, carrying the toxins with it, to be eliminated by the kidneys. The leucocytosis which is at the same time induced, acts further in destroying the septic germs, and between these two processes the infection is controlled if only the patient's general vitality is maintained. We believe we can assist in the cycle of events in several ways. For instance, copious subcutaneous or intravenous infusions of normal saline solution, or of 5 per cent. of glucose in distilled water, not only help to raise the vascular tension lowered by sweating, vomiting and toxaemia, but also further the dilution and elimination of the toxins by the kidneys; morever, leucocytosis is said to be increased by these means.

The same processes for the destruction of bacteria are seen in operation in other analogous cavities of the body, notably the joints and spinal canal when infected through the blood stream. A joint thus recently infected may be found to swarm with bacteria. Subsequent aspirations may show—except in the most virulent infections, usually from without—an ever diminishing number of organisms, until at last they cannot be found either in smear preparations or by cultivation. The same is seen in cases of spinal meningitis. I have had several which have recovered perfectly. Two are recorded (and many more collected from other publications) in the *Transactions of the Royal Society of Medicine*, 1907, where suppurative meningitis of the dura, producing almost hopeless general conditions, recovered under no other treatment than repeated withdrawal of the highly infected fluid by repeated tapping of the lumbar sac.

There is much evidence, then, for the belief that the serous cavities of the body, being so important, are provided with specially powerful defensive works to protect them from bacterial invasion. It should be our aim to assist them surgically when they are in danger of being overpowered by the accumulation of bacteria and their toxins—sometimes by evacuation with drainage, sometimes by evacuation without drainage. We should always study to interfere as little as possible with the natural protective agencies. Overhandling, over-disturbance, overstimulation with chemical germicides, have long been recognized as harmful, and I feel sure that over-free use of drainage also often plays an injurious rôle. The mere fact that a wound in the epigastrium is kept open by the insertion of foreign material must more or less disturb the vascular balance within the abdomen; and the presence here of an open wound is more painful during the first few critical days than a closed one, on which the movements of respiration have less effect. The daily readjustment, too, of drains and dressings must cause a great addition of pain with all its depressing influences at the patient's weakest time, besides increasing the risk of added sepsis. I do not think there can be any question that a patient's general condition is more satisfactory with a closed wound healing more or less by first intention under a dressing untouched for days than with an open wound.

Of course an attempt to obtain primary union may not be quite successful in some cases. Invisible septic particles may have lodged in the wound and may infect the deeper or superficial stitches, and some of these may suppurate. But this, if it occur at all, will take place after some days, during which the peritoneal cavity has, at all events, been at rest. At the worst in such cases some of the deep stitches have worked out without delaying the general recovery longer, perhaps, than had the wound been drained. This is a small price to pay for getting the abdomen closed at once and giving the patient rest for the first few days while the catastrophe within is repaired. As a matter of fact, the number of cases of perforated gastric and duodenal ulcers treated by immediate closure of the abdominal wound, treated in my beds by myself and others, has largely increased, and primary union has been the result in an ever larger proportion of late. Some will continue to be drained after such lesions, but I think fewer and fewer.

Here, again, the character of the fluid met with when the abdomen is opened will help to decide the point in question. If much putrid food have escaped from the perforation and the resulting peritonitis has yielded an acrid acid fluid as tested at once by litmus paper, the case is a bad one. If, besides, there is deep injection of the intestines with distension, and little or no plastic lymph is seen, we may count on a virulent form of infection, which would inoculate our wound at once and prevent its healing. Here I should drain freely, but with small hope for the patient.

But in some cases of fasting stomach there is little extravasation through the perforation. Here we find a bland whey-like alkaline or neutral fluid with no deep injection or distension of the intestines, while they show an inclination to adhere by plastic lymph. In these cases, after careful cleansing of all the pockets of the peritoneum accessible to swabs on holders, I am now inclined to close the abdomen completely without drainage. Many such cases have healed without further trouble by primary union. For instance, in a case of duodenal perforation the diagnosis was very obscure, and an opening was made over the vermiform appendix, which was under suspicion. The whole peritoneal cavity was full of the bland fluid alluded to, and there was some free gas. Recognizing the true condition now, I opened in the epigastrium, found the perforation near the pylorus, and closed it. After thorough swabbing of the whole peritoneal cavity I stitched up both wounds without drainage, and permanent primary union without a flaw was the result, the patient being soon well.

PYOSALPINX.

Let us take now another acute abdominal condition. If on opening the abdomen a pyosalpinx with localized peritonitis is found, there need be less hesitation. Here the immediate closure of the wound may be done in the large majority of cases. In the first place, it is known to bacteriologists that the pus from pyosalpinx is sterile in about 50 per cent. of ordinary cases. In this group there is no special reason for drainage if oozing from adhesions can be quite controlled. But in the other half of the cases the virulence of the bacteria mitigated by long residence in the body is low, as indicated by the plastic exudation and the absence of inflamed and paresed intestines, and a carefully sutured wound will heal *per primam* in the majority of cases in spite of the pus. I have seen this over and over again, and also after ruptured tubal pregnancy.

INTESTINAL GANGRENE.

Again, in another class of lesions the same question has to be considered. I allude to gangrene of the gut from internal strangulation. Here, except where there has been perforation and faecal extravasation, drainage should be avoided after removal of the damaged portion. The plastic processes appear to me to be more perfect without a drain, which may prevent the apposition of healthy structures around our line of suture. I could produce many instances to illustrate this point; one or two will suffice. A few years ago I had to remove four feet of small intestine black and gangrenous from constriction of an omental band. On opening the abdomen, over a pint of dark putrid flocculent fluid escaped. After the excision of the gangrenous coils and junction of the ends, the wound was completely sutured without drainage, and primary union followed. Her doctor tells me the lady has remained perfectly well ever since, with no signs of adhesions. Another similar case occurred to me in hospital a few years earlier. Here I removed 5½ ft. of small gut for gangrene with a couple of pints of dark putrid fluid. Perfect primary union followed without drainage. The patient was a feeble woman of 76, and was quite well when I last saw her two years after operation. In both cases the putrid fluid, one would have thought, ought to have interfered with primary union, but it did not.

In cases of removal of the caecum where we open up areolar planes it may be a different matter. Drainage may perhaps be required unless we are perfectly certain of our asepsis in removing the gut. To deal with more or less sepsis in the peritoneal cavity is quite another thing to arresting its progress in areolar tissue. But even here drainage may be discarded in many cases, as I know.

I have asked your consideration of these points and given you some of my experiences in the hope of drawing your attention to a subject upon which our conclusions are not yet fully crystallized and in an attempt to arouse a more careful clinical study which must always go hand in hand with bacteriological work. I am addressing experienced practitioners, not young student beginners who might be likely to draw wrong conclusions from the speculations offered them. These are of no recent growth. It must be more than twelve years ago since I ventured to publish a paper on this subject. And experience, in many cases combined with what we have learnt from bacteriology, has served to confirm and amplify the deductions then put forward.

THE Royal Dental Hospital, Leicester Square, has received from the executors of the late Captain T. B. Heathorn a donation of £400.

THE Association of Infant Consultations and Schools for Mothers, which is now doing its work as a department of the National League for Physical Education and Improvement (4, Tavistock Square, London, W.C.), has in view a competition in the subject of mothercraft, the competitors being women attending the various schools for mothers in London. It is proposed that each of the schools shall select by competition not more than six representatives, and that these shall subsequently take part in a competition held by the association itself for prizes in nine classes of work. Among the latter are dressing and undressing a baby, laundry work, cooking, cutting out and making garments, knitting, and cleansing babies' bottles. A prize will also be given for the baby evidencing the best condition and greatest care, provided that it is shown by a mother in possession of a favourable report as to her home for a period of not less than three months signed by a health visitor or other responsible person. The competition is to take place during the health week, April 6th to April 12th.

APPENDICOSTOMY IN PLACE OF COLOSTOMY FOR RELIEF OF OBSTRUCTION CAUSED BY IRREMOVABLE CANCER OF THE RECTUM AND COLON.

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I PROPOSE to show, in cases of cancer of the rectum and colon too far advanced for excision, that colostomy, in particular left inguinal colostomy, is often an operation in excess of the requirements; and that in such cases appendicostomy can afford sufficient relief, whilst avoiding the great discomfort and disability provoked by colostomy. There is no sufficient evidence that colostomy checks the progress of the cancer itself, and it does not prevent pain from setting in when the pelvic nerves become involved. Left inguinal colostomy is especially indicated for inoperable cancer of the lower part of the rectum; when the disease is situated higher up appendicostomy may be substituted.

Even when the colostomy has been performed in a completely successful way, yet the irregular escape of gas and faeces, excited by any unusual incident, is the cause of grave discomfort. The patient, if a man, finds himself unable to dispense with the services of a nurse, and when the advance is slow the continuous attendance of a nurse becomes very trying. If a wife or daughter acts instead of a nurse, the changing of the dressing, especially at night, induces weariness and disgust, and when time proves that the colostomy has been done for a non-malignant condition, then the limitation which the colostomy imposes upon an active life becomes a heavy burden; a man cannot go an hour from a lavatory because he cannot be sure when he may need to clean himself. One patient upon whom left inguinal colostomy was performed, for what was diagnosed as inoperable cancer, died seven years later, apparently not of the cancer at all. Another similar case has lived longer still, cut off from active life, as just mentioned. Both have bitterly complained to their friends of the excessive nature of the operation.

My practice of appendicostomy owes its origin to the late Mr. Keetley,[1] although I do not find that he or any subsequent writer on appendicostomy has advocated it as I do here. Moreover, in the reports of recent discussions on cancer of the rectum and colon by those especially interested in these subjects,[2] no one advocated any other alternative than colostomy for inoperable cancer; at the same time there appears in such discussions no due recognition of the great discomfort incidental to colostomy, even when perfectly successfully carried out.

Before using it as recommended in this paper I had successfully employed appendicostomy in several cases for the relief of tympanites complicating acute appendicitis. In two cases in which the tympanites persisted after the appendicitis, unrelieved by other measures, the reopening of the wound and the establishment of an appendicostomy afforded relief, and the patient recovered without a fistula persisting.

I have made the appendicostomy opening just at the funnel-like junction with the caecum as seen when the appendix is drawn out. Into this is inserted a winged rubber catheter, or a glass cannula with a flange which is fixed by turning in the margins as described in the gastrostomy method known by the names of Kader and Senn. Such a fistula will close spontaneously if the tube be soon left out, say after ten days. If a tube is kept in, a valvular fistula becomes established. If after, say, three months the catheter is then omitted to be regularly passed, the fistula will tend to scab or skin over, but is readily reopened.

By attaching rubber tubing and a funnel to the outer end of the catheter fluid may be run in or gas and faecal fluid siphoned off at will, without moving the patient or his dressings. When the distension has been once relieved an ounce or two of olive oil shaken up in a pint of soap and water, and run in early in the morning, will induce a motion per rectum in an hour or so, sufficient for the next twenty-four hours.

If olive oil is not sufficient, a drachm or more of castor oil or magnesium sulphate may be added, but excess excites repeated motions and has to be avoided. Scybala are got rid of by increasing the amount of soap and water run in. When the motions are thus regulated there is but rarely any escape of gas or faecal fluid by the fistula, and the patient can get about with a pad and bandage over the fistula, without fear of having to change it or of any faecal odour being perceptible. Should he find later on, as in the few, that the bowels can be regulated by aperients and the catheter is no longer passed, the fistula will scab over and then no dressing at all is required.

The cases upon which I have performed appendicostomy divide themselves into three classes:

1. Cases of acute intestinal obstruction who survived only a few days.
2. Cases which lived for months whilst the disease pursued its course to the end.
3. Cases who returned to active life.

During this period I have performed left inguinal colostomy in two cases for inoperable cancer involving the lower third of the rectum, and in two other cases certainly suffering from inoperable cancer I advised that there were no sufficient indications for any operation at that time.

1. *Cases of Acute Intestinal Obstruction in which Appendicostomy was done and Gas and Fluid Siphoned off until the Distension was Relieved.*

(*a*) Female, aged 53, with inoperable cancer of the sigmoid flexure. Appendicostomy was done on March 4th, 1910, and she died the next day.

(*b*) Male, aged 63, with cancer of the splenic flexure and transverse colon. Appendicostomy was done on December 16th, 1909, and he died on December 23rd.

(*c*) Female, aged 78, with cancer of the ascending colon and multiple growths all over the abdomen. Ileo-sigmoidostomy and appendicostomy were done on December 11th, 1908, and she died on December 13th.

(*d*) Male, aged 32, with cancer of the upper part of the rectum. Appendicostomy was done on December 29th, 1910, and he died on January 8th, 1911.

There was in these cases no recurrence of the distension; the nurses frequently ran in fluid through the tube, and siphoned off faecal fluid without disturbing the patients; also faeces passed per rectum.

2. *Cases which Survived for Some Months.*

(*a*) Female, aged 56, with cancer of the upper part of the rectum. Appendicostomy was performed on November 9th, 1910, and she died on June 12th, 1911. Meanwhile the patient got about, and did not suffer until about three weeks before death. She was under the observation of Dr. Francis of Uxbridge.

(*b*) Female, aged 64, with cancer of the sigmoid flexure and a secondary mass in the anterior edge of the liver which came to involve the transverse colon. Appendicostomy was performed on March 25th, 1911, and she died on August 11th, 1911. She remained comfortable, and was able to get out in a bath chair. She suffered very little. She was under the obvervation of Dr. Collier of Westminster and Dr. Lush of Hampstead.

(*c*) Female, aged 62, with cancer of the upper part of the rectum. Appendicostomy was done on November 7th, 1911, and she died on March 31st, 1912. She got about well at first and was under the observation of Dr. Bennion of Orpington. During the last few weeks she suffered a great deal of pain.

(*d*) Female, aged 57, with inoperable cancer of the upper part of the rectum. She had become exhausted by irregular attacks of fever, the cause of which was obscure until the intestinal obstruction intervened. Appendicostomy was done on August 15th, 1912, after which she remained in a comfortable state without either obstruction or pain but with irregular elevations of temperature until her death on November 10th. She was under the care of Dr. F. H. Spooner.

The colleagues under whose observation these patients were after the establishment of the appendicostomy agreed with me in instituting comparisons favourable to appendicostomy, as affording a sufficient relief from obstruction. In none of these was there any marked haemorrhage or discharge from the growth. The fluid run in through the appendicostomy fistula every morning produced a sufficient motion and prevented any recurrence of intestinal distension and obstruction.

3. *Three Cases have Returned to Active Life after the Appendicostomy.*

(*a*) Female, aged 65, with inoperable cancer of the upper part of the rectum, Appendicostomy was done on April 16th, 1912, and I saw her on November 15th. She had got a little thinner but was quite active, the abdomen flat, the fistulous opening in

which she was keeping the catheter surrounded by healthy skin. She had been running in only a small amount of olive oil and soap and water daily, but the growth was advancing and the amount required to be increased. She was under the observation of Dr. Glegg of Datchet.

(*b*) Male, aged 58, with inoperable cancer of the rectum at the level of the promontory, of which there had been symptoms for more than a year. Appendicostomy was done on November 2nd, 1910. A year later he came to the hospital to see me; he had been working meanwhile as a packing-case maker. He had passed a catheter through the fistula for three months, then, finding he could regulate his bowels by aperients through the mouth, he had omitted to pass it, and the fistula had become covered by a thin skin. He had latterly felt himself getting weaker, and proposed to work half time; the growth had made some advance. He attended again on November 25th, 1912—that is, two years after the operation; he had continued at work, and only complained of what he called "chronic diarrhoea."

(*c*) Male, aged 63, bachelor. A large fixed mass occupied the left inguinal region, in the centre of which was an abscess coming forwards to the surface, and upon this intestinal obstruction had supervened. Appendicostomy was performed on October 9th, 1909, and at the same time the abscess incised; it seemed to be situated in the middle of a mass of cancer round the sigmoid flexure. On November 28th he was able to leave the nursing home with the abscess healed. On February 10th he had recovered sufficiently to resume his previous active life, the bowels acting well when fluid was run into the fistula, and from which there was no regurgitation. He could manage this himself, and had only a manservant to attend on him. The mass in the left inguinal region had shrunk to a hard fixed mass. He continued under the observation of Dr. C. P. Sampson. In September, 1911, a friend who travelled with him on the Continent described him as in magnificent health.

Perhaps time may prove that in this case the disease was really inflammatory.

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[2] Discussion on Cancer of the Rectum and Pelvic Colon, by Mr. W. E. Miles and others, at the London Meeting of the British Medical Association (BRITISH MEDICAL JOURNAL, 1910, ii, 941), and by Mr. Harrison Cripps and others at the Liverpool Meeting of the Association (BRITISH MEDICAL JOURNAL, 1912, ii, 843).

GANGRENE OF THE VERMIFORM APPENDIX AND OF A COIL OF SMALL INTESTINE: OPERATION: RECOVERY.

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THE conditions in the case related below seem sufficiently unusual to be put on record:

A single woman, aged 31, gave the following history: In May, 1911, she had an attack of pain in the right side of the abdomen, which ceased after a few days. Six months later, on November 2nd, at 2 a.m., she was again seized by a similar but more severe and continuous pain. Dr. D. M. Mackenzie of Southall saw her, and diagnosed acute appendicitis. The bowels acted, but the pain increased rather than diminished. The woman, who was in domestic service, was taken in a cab to her own home on November 2nd, and was admitted to the Samaritan Free Hospital at 7 p.m. on November 4th, sixty-five hours after her illness began.

She was then flushed, and looked very ill. The temperature was 100° F. The abdomen, which moved only slightly in respiration, was tender and distended, there being marked resistance to pressure over the caecal region. The rectum was loaded, and an enema caused the bowels to act, after which the distension of the abdomen subsided, and all pain ceased.

When I saw the patient, about two hours later, she still looked very ill, but the flushed condition had given place to extreme pallor, the pulse was feeble (140), and the abdomen was flaccid, there being neither pain nor tenderness nor resistance to palpation anywhere. By combined pelvic and vaginal examination an ill-defined soft mass of tissue was felt in the upper part of the pelvis on the right side. The woman was not collapsed, and she felt very much better when the pain ceased. The relief was so great that I hesitated about operating, but the history and the conditions observed seemed to indicate that an examination by incision was necessary.

At 10 p.m., sixty-eight hours after the first onset of pain, a short incision was made parallel to Poupart's ligament on the right side, and immediately several ounces of bluish-black fluid of the consistence of serum escaped from the wound. This fluid had no resemblance to pus. It was apparently free in the peritoneal cavity, and my first impression was that a ruptured extrauterine fetation existed, and that the indefinite mass in the pelvis was blood clot. Further examination showed that a piece of intestine was gangrenous, and a second incision was made in the middle line to allow free access to the parts. A loop of small intestine in a necrotic condition was partially and lightly adherent round the lower end of the caecum. This coil after being easily separated was wrapped in swabs, and placed out of the way in the middle of the abdomen. It was then seen that the vermiform appendix was gangrenous and perforated. It was adherent to the inner side of the caecum, and had been surrounded by the dark coloured fluid most of which had already escaped or been swabbed away. The appendix was removed by crushing and ligaturing its base and inverting the stump by a purse-string suture.

Then the unhealthy portion of small intestine was again exposed. It had a faintly putrid odour, and its surface over a length of about 12 in. was dead, being in some places quite black, in others having various shades of grey. The junction between the diseased and healthy parts was well defined. The bowel was double-clamped and divided above and below the necrosed portion and the mesentery of the isolated piece was cut away. There was just enough small intestine left attached to the caecum to allow a lateral anastomosis to be made after inverting and securing the retained divided ends of the bowel.

The peritoneal cavity was drained through both incisions, and there was a very free discharge of yellow serum for a few days, but except a looseness of the bowels, which continued for rather more than a week, there was no complication of any kind during convalescence, the highest temperature being below 101° F.

The patient came to the hospital on March 22nd, 1912, four and a half months after the operation, to report that she was quite well and that the bowels gave no trouble. She wished to know if she might emigrate to Canada, and I thought she might safely do so.

The necrosis of a coil of small intestine which occurred in this case is a condition which I have not seen before in association with gangrene of the appendix. Some years ago[1] I suggested that gangrene of the appendix frequently occurred without any symptoms until after a portion of its wall had died. I published a case[2] in which profuse haemorrhages from an opened appendix abscess cavity were associated with areas of gangrene.

These were seen when the apposed and apparently healed surfaces of the wound were separated with a view to finding the bleeding point. They consisted of dark-coloured superficial areas, about a quarter of an inch in diameter, scattered over the freshly exposed cut surfaces, exactly like cultivations of an organism upon a solid nutrient material. No bleeding point was found, but there was no further haemorrhage, and the visible necrotic areas gradually separated after the wound was laid open and drainage of its deep part was made very free. It seemed certain, therefore, that the necrotic areas were caused by the action of an anaërobic microbe which destroyed the wall of some vessel or vessels in the deep part of the abscess cavity. As there was no sign that the abscess would not heal well in that case until the first haemorrhage took place, it may be inferred that the cause of the necrosis did not induce any irritation or inflammatory reaction.

The gangrene of the intestine in the case now related seems also to have been due to some microbe in the fluid around the gangrenous appendix. It is hardly possible that the intestine could have been in the condition described for the three days, or very nearly three days, of the patient's illness. I am inclined rather to think that the pain was due to tension within the appendix; that relief was due to rupture of the appendix; and that the necrotic change in the bowel was very recent, being caused by an exceedingly rapid action of some micro-organism in the fluid that escaped into the peritoneal cavity after the patient's admission to hospital. Serous fluid of a yellow colour, and more or less clear, is often seen collected in a pool around a gangrenous appendix, although not held there by adhesions. In the case now recorded the fluid was of a very dark colour, and apparently it had a necrogenic effect upon the bowel.

It is, of course, conceivable that the condition of the bowel was the cause of pain, and that the cessation of pain was due to the emptying of the intestine by the action of the enema and to the consequent relief of tension within it; but it is very difficult to believe that an enema would act if the bowel had been even for a very few hours in the condition above described; and the pain was of very nearly three days' duration.

Pain is undoubtedly sometimes due to the escape of the contents of a vermiform appendix into the peritoneal cavity; but there is quite commonly a stage, as in this case, in which after the appendix has ruptured, and apparently immediately after its rupture, there is for a time complete freedom from pain.

It is a question whether an enema should have been administered when the patient was admitted to the hospital. In this particular instance the effect was good, for the operation was easier with the intestines collapsed than

it would have been if they had remained dilated. But if acute appendicitis requiring operation is diagnosed, it is usually better to operate first and to clear the bowel afterwards. The enema seemed to determine the onset of the condition in which alarming symptoms subside, and therefore its effect was to help the patient not to a cure but to a further stage of the disease, to that dangerous state in which the practitioner is tempted to believe that his patient is better, and that operative interference is not necessary. If this view had been adopted in the case now recorded, it is certain that a few hours' delay would have made the conditions very much more serious, if not altogether hopeless. An operation then, or a *post-mortem* examination, would have shown an intense general peritonitis affecting the parts around the appendix region most severely.

Whatever the exact interpretation of the symptoms may be, the case illustrates (1) the imperative need for operative treatment in certain cases of appendix mischief, and (2) the importance of sudden cessation of severe pain as a sign that the conditions have become not less but more urgent. I do not believe that appendix cases can be understood until it is recognized that there are two distinct forms of mischief—one, inflammation commencing in the mucous membrane; the other, gangrene brought about by the action of a necrogenic microbe which causes no inflammation until the dead part is separating, or has separated. Each of these conditions may complicate the other, but typical cases are easily defined. There can at least be no question that, in many cases of gangrene, operative treatment is alone of use, whilst there are other cases in which even severe inflammation causes little real danger.

But the difficulty of recognizing which condition exists is sometimes so great that the surgeon thinks the safest course is to assume the worst, and operate at once, believing that if the patient would recover without operation, an operation will not prevent his recovery, and knowing that if the appendix is ruptured without adhesions having formed, delay in removing it is exceedingly dangerous, whilst a sufficiently early removal is almost always successful.

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TWO CASES OF GANGRENOUS APPENDICITIS WITH UNUSUAL HISTORIES.

BY

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THE two cases of appendicitis the histories of which are given below were met with within twenty hours of each other, and, showing as they do several points of interest, are, I think, therefore worth recording.

CASE I.

J. P., male, aged 9 years, was first taken ill on September 1st, 1912, when he complained of pain in the stomach. He had previously been healthy, although from infancy he had from time to time complained of pain on passing water. When seen first he had no objective symptoms; the pulse was 88, and the temperature normal, the belly soft without any tenderness; a bismuth mixture was prescribed. Between September 1st and September 6th he was seen each day. The pulse remained steady and below 90, and the temperature both night and morning was normal. When seen he was generally playing with his toys and free from pain, though there was always the story that he occasionally would cry out with paroxysmal attacks of sharp pain. His bowels were opened each day. On September 6th I was sent for as the child had been attacked with severe pain while passing a motion. On examining him an hour after the pain had commenced I found his belly wall absolutely rigid. The pulse was 80, and the temperature 98.8°. The tongue was moist, but he wore a somewhat worried look. I diagnosed acute abdomen, and had him removed to hospital. On admission the temperature was 101.4° and the pulse 120. I operated immediately and found the belly full of pus. On feeling for the appendix I found it hanging over the edge of the pelvis. It was adherent to the bowel and bladder, but was separated with ease. It was a long one; the first 2 in. appeared healthy, but distal to this it was enlarged to the thickness of one's thumb. It was gangrenous and had a perforation. On opening it I found a concretion the size and shape of a "monkey nut." The appendix was removed, the pus swabbed out and the belly drained in four places, in each loin and in each flank. The boy made an uneventful recovery.

CASE II.

J. C., male, aged 32, came to consult me on his way home from work on September 5th, complaining of severe pain in his abdomen; the pain was localized and was eased by pressure. I found no tenderness of the abdomen. I was able to feel the outline of the pelvic brim throughout its whole extent, and no tenderness was elicited on deep pressure; the pulse was 80 and the temperature 98.2°. He was sent home to bed with a simple remedy. I was called to see him on September 7th, and found that he had been vomiting all the preceding night. The pulse was 88 and the temperature 98.6°. There was no tenderness on deep pressure in the iliac region nor in any part of the abdomen. The tongue was moist, but his face had a slightly anxious mien.

I think because of the remembrance of the case of the preceding night more than because of any definite signs or symptoms, although the man's expression was suggestive, I determined to explore his abdomen. On opening the belly a little clear fluid escaped. I felt for the appendix and found it lying in exactly the same position as in the case of the boy, hanging down into the pelvis against the bladder. I removed the appendix, and here again found the first 1½ in. healthy, the distal 3 in. gangrenous and enlarged to the size of a small banana. I put in a large drain, swabbed up the fluid in the abdomen, and sewed the rest of the wound up. This patient also made an uneventful recovery.

On incising the appendix I found the dilatation full of pus and containing six tin tacks and eight little shot. To explain the presence of this medley I subsequently discovered that the patient up to eight years ago followed the trade of a joiner, when he was accustomed to hold the nails in his mouth. The nails, he explained, were thrown from a box which contained small bits of lead and other remnants into his mouth, and he remembered that he often got odd bits of lead, etc., in his mouth with the nails.

From these two cases several interesting and instructive lessons, I think, may be gained.

Neither patient had a raised temperature or quickened pulse, although in both cases we must, I think, presume that pus was present in the appendix before the acute symptoms arose. I think the explanation of this lies in the fact that the appendix in each case was chronically thickened by the presence of the foreign bodies and therefore there was no escape of poison into the circulation and no infection of peritoneum.

In the case of the child the perforation occurred obviously while he was straining at stool, which is an interesting point.

The paroxysmal pain which each patient suffered before the acute symptoms was a true appendicular colic, the organ trying to expel the foreign bodies it contained.

Almost all surgeons are now agreed as to the advisability of operating immediately appendicitis is diagnosed, but here were two cases with an appendix enormously dilated which were not diagnosed before acute symptoms supervened, although both cases were examined systematically and thoroughly with one clinical method omitted—that is, examination per rectum. The excuse for this is obvious; there was nothing to lead one to suppose mischief in the appendix, although it was carefully examined, but I feel confident that, had a rectal examination been made, the local tenderness would have thrown light on the condition one had to deal with, and spared the patients the acute termination which so greatly endangered their life. These cases emphasize the importance of this examination being made as a matter of routine in all abdominal cases.

Another point which both these cases illustrated is the importance of the abdominal facies. When first seen, except for the rigid abdomen in the case of the boy, neither patient had any objective symptoms except this worried anxious look.

THE late Dr. Frederic Bagshawe, of St. Leonards, left estate valued at £80,817, of which £78,534 was net personalty.

HEARSEY, in his sleeping sickness *Diary* (Part XVIII) for the Nyasaland Protectorate, states that since the issue of the last number 17 additional cases of the disease have been diagnosed by Dr. Shircore. These, added to the 76 previously recorded, make a total of 93 cases. The value of a new drug, "Dye B. S. (Brieger and Krause)," was tested in some of the cases, but Dr. Shircore finally came to the opinion that it was not only useless as a therapeutic agent, but might even be harmful.

THE METABOLIC UTILITY OF RECTAL FEEDING.*

BY

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In order to alleviate starvation, when a patient cannot be fed by the stomach, it is the custom to introduce various food materials into the rectum. This procedure depends on the assumption that such materials can be absorbed by the colon and are metabolized in a normal manner when absorbed. When given in this way saline solution is undoubtedly useful as a source of water. Dextrose solution is fairly well absorbed, but starch and fat are probably of no value. The utility of protein is doubtful. Langdon Brown found no increase in urinary nitrogen as a result of giving partly predigested protein by the rectum, and concluded that earlier observations, showing that as much as 50 per cent. of the protein given might be absorbed, were largely fallacious owing to the notorious difficulty of washing out the colon completely.

1. *The Disappearance of the Nitrogen of Peptonized Milk and of Dextrose from the Colon.*

To a girl 6 years of age, who could not be fed by the mouth, 10 per cent. dextrose was given per rectum for two days. Peptonized milk was then given for two days, and then 10 per cent. dextrose again for two days. The whole of each enema was retained; but, as is customary, the colon was washed out at the end of each day with saline solution. The nitrogen recovered in this way up to fifty-eight hours after the last administration of milk amounted to only 0.34 gram out of a total of 2.80 grams given in the milk, so that 88 per cent. of the nitrogen was apparently absorbed. Of the dextrose 99 per cent. was absorbed. The urine showed a good reaction for indican on the days when milk was given, and none when dextrose was given, so that evidently some bacterial decomposition of the protein preceded absorption.

It may very well be the case that bacterial decomposition is necessary before protein can be absorbed in this way. As various toxic substances may thus be produced, it becomes doubtful whether rectal feeding with protein is desirable, even when considerable absorption takes place.

2. *The Influence on Metabolism of Dextrose Administered by the Rectum.*

The abnormalities in the urine during starvation, which are due to lack of carbohydrate, are: (*a*) The presence of creatin†; (*b*) the presence of acetone, diacetic acid and oxybutyric acid with the resulting acidosis and increase in the proportion of nitrogen as ammonia.

Catheart has shown that, when a diet consisting only of carbohydrate is taken, these abnormalities are largely prevented, and the total daily nitrogen of the urine is less than in starvation, and that, when carbohydrate alone is taken after starvation, the creatin and acetone bodies disappear rapidly, but the fall in urinary nitrogen and in the proportion of nitrogen present as ammonia is much less rapid.

We have investigated the changes produced in the urine by the administration of dextrose per rectum in four cases—a girl, a boy, and two men. The girl has already been referred to. No definite changes were observed on giving dextrose by the rectum, but the periods were probably too short. As is usual with children in starvation, the acetone bodies were present in considerable quantity, as much as 0.57 gram total acetone and 1.94 grams oxybutyric acid being obtained on one day by Shaffer's method of estimation. On the first day of the second period of dextrose the urine contained 0.05 per cent. lactic acid, or 0.36 gram per diem, which fact indicates that there was considerable formation of lactic acid from dextrose by bacteria in the gut.

In the other 3 cases 10 per cent. dextrose was given by the rectum for various periods, of which the greatest was six days. In one case the effect of increasing the dextrose was observed; in another dextrose was given by the rectum after a period of starvation and followed by milk given by the stomach; in the last case the effects of salines per rectum, dextrose per rectum, dextrose by the mouth, and milk and eggs by the mouth were compared. Dextrose absorbed from the rectum was found to cause a reduction in the daily amount of creatin and of total nitrogen in the urine roughly equivalent to that of similar amounts of dextrose, or other carbohydrate, when given by the mouth, but to be far less efficient than that given by the mouth in reducing acidosis and the formation of the acetone bodies. In these cases the lactic acid in the urine was scarcely above normal, and only traces of lactic acid were found in the material returned from the rectum, so that the failure of the dextrose enemata to influence the acetone bodies can scarcely be accounted for by bacterial change occurring in the alimentary canal, and we have no other explanation to offer.

One of the adult cases had had rectal salines, but no food, for a week, owing to oesophageal obstruction, which was probably malignant. He was then given 10 per cent. dextrose per rectum, so that he received and retained 114 grams dextrose on the first day and 170 grams on the second, third, and fourth days. On the third day the operation of gastrostomy was performed with chloroform anaesthesia. On the fifth day feeding by the stomach was begun, so that he received on this day protein nitrogen 0.95 gram, fat 6.1 grams, carbohydrate 37 grams. The allowance of food was increased day by day, so that on the eighth and seventeenth days he was receiving 100 grams and 210 grams of carbohydrate respectively.

No diacetic acid was detected at any time. When dextrose was given by the rectum the daily creatin fell continuously. The anaesthetic on the third day caused a distinct acidosis, but no increase in the creatin. The nitrogenous excretion was probably influenced by the anaesthetic. It showed no dimunition up to the fourth day. On the fifth day the carbohydrate given by the stomach was much less than that given previously by the rectum. A marked rise in the creatin occurred, and a rise in the nitrogen greatly in excess of the nitrogen in the food.

Table showing Results Obtained.

Day.	Grams per Diem.				Acetone.	Acidity cc. N/10 per Diem.	Ammonia Ratio per Cent.
	Total Nitrogen.	Creatinin.	Creatin.	Oxybutyric Acid.			
2	9.95	0.92	0.37	0.070	+	292	5.3
3	8.97	0.80	0.31	—	+	419	8.5
4	9.56	0.88	0.28	0.061	+	358	10
5	17.4	1.48	0.93	0.049	Trace	505	8.5
6	15.8	1.27	0.32	—	0	173	5.6
7	12.0	1.06	0.47	—	0	207	5.5
8	11.9	1.17	0.31	—	0	325	6.9
17	—	1.28	0.00	—	0	—	—

In these experiments 10 per cent. dextrose was employed in order to obtain as large an absorption of dextrose as possible, but for general use a 6 per cent. solution in tap water, which is isotonic with blood, would be found more convenient as it is less irritating; 15 oz. or more of this solution given four times a day is frequently well retained by an adult, if the rectum is thoroughly washed out once a day with saline solution. It is more useful than saline solution in that:

(*a*) The 100 grams or more of dextrose which is thus daily supplied to the body causes a diminution of nitrogenous waste.

(*b*) The substance employed to render the solution

* Expenses of this investigation have been defrayed from a grant made to J. H. Ryffel by the Science Committee of the British Medical Association.

† Some creatin is normally present in the urine of children, but not in that of adults.

isotonic is oxidized in the body, so that isotonic dextrose solution is more efficient as a source of water than an equal volume of isotonic salt solution.

In conclusion we desire to thank Dr. Hale White, Mr. Symonds, and Mr. Steward, of Guy's Hospital, for permission to publish the results of investigations made on patients under their care.

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RENAL CALCULUS IN CHILDHOOD.

WITH A REPORT OF TWO SUCCESSFUL CASES OF NEPHRO-LITHOTOMY IN YOUNG CHILDREN.

BY

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As to the infrequent occurrence of stone in the kidney in young children all writers are agreed. Sir Henry Morris,[1] in an analysis of 283 cases of renal calculus, met with only one case in a patient under 10 years of age. Drew records the removal of a uric acid stone from the kidney of a child aged 6 years. The rarity of calculi causing symptoms at this period of life seems somewhat extraordinary, when one remembers that at autopsies on the bodies of infants it is extremely common to find small brown granules of uric acid deposited in the pelves and calyces of the kidneys. Holt[2] considers that very small calculi are common in infancy, but in a series of 1,000 autopsies made by him on the bodies of children under 12 years only one stone of any noteworthy size was found.

It is probable that the almost exclusively fluid diet of the first two years of life is responsible for the solution, or washing out, of these uric acid granules, though the earlier histories of certain cases which come to operation in later years make it extremely likely that the calculi were present in childhood. Morris records that on several occasions he has met with a history of symptoms dating back from twenty to thirty years, showing that the calculi existed in quite early life. Amongst his cases also are those of children of 13 and 11 years who had presented symptoms of calculus for seven and three years respectively.

Heaton[3] gives an account of the successful removal of a uric acid stone weighing 35 grains from a female child of 11 years; the patient suffered severely from shock after the operation, but ultimately recovered. Amongst cases in which calculi were found at autopsies are three reported by Newton Pitt.[4] These were all uric acid stones, and weighed 2 grains, 4 grains, and 2 grains respectively, being found in children under 2 years of age who died of diphtheria and bronchopneumonia. In the second of these cases the mother noticed polyuria but no haematuria; in the last case haematuria was observed, but in the first case there were no renal symptoms at all. A similar case is noted by Partridge[5]; at autopsy a stone of 4 grains weight was found in the pelvis of the left kidney. The child had shown no symptoms suggesting the presence of a calculus, and no examination of the urine was made. Death occurred from pneumonia.

The reputed uncommon occurrence of stone in the kidney in children is probably the chief reason why it is overlooked when actually present. Again, renal pain is practically always referred, by a child, to the abdomen, and so is ascribed to gastro-intestinal disturbance, the most common of the complaints of childhood. The pain may also be referred to the hip or spine, and produce simulation of disease in these regions to such an extent that the kidneys are never suspected, and escape examination. Pain due to renal calculus depends on the position and mobility of the stone or stones; the kidney substance is insensitive, the pelvis and calyces highly sensitive. The pain is frequently referred to the groin; in boys it is accompanied by retraction of the testicle, which is much more commonly seen at this stage of life than in later years.

It is obvious, from what has already been said, that in children, as in adults, calculi may be present without causing any symptoms. The most constant and reliable symptom, however, is haematuria. Lumbar pain is not common in children. The presence of fine uric acid sand should be looked for in suspected cases; the urethral irritation caused by this substance is sometimes a cause of nocturnal incontinence, and the urine of patients suffering from this trouble should always be carefully examined for uric acid crystals. Transient haematuria may be caused by the effect of these small grains on the tender kidney tubules, and is not of much importance; if it persists it must be regarded as serious and especially so if there be pain along with the haemorrhage.

In infants from 6 to 18 months old the commonest cause of haematuria is scurvy, and it must be borne in mind that blood may be present in the urine for some days before tenderness of the limbs becomes noticeable. In Drew's case, mentioned above, intermittent lumbar pain was the only symptom; there was no haematuria, but a skiagram revealed the presence of a calculus.

In May, 1912, Dr. J. J. Cox asked me to see the following case:

A little girl, aged 3 years, who had been suffering from intermittent haematuria for some weeks. In May, 1911, there had been a similar attack, and I am informed that on one or two occasions the child complained of some slight lumbar pain. From that time until January, 1912, there was no further evidence of any disease, the child appearing to be in perfect health. For three months before the time when I saw her the general health had been failing, though the child looked well nourished. Dr. Cox noticed the presence of slight haematuria and a little tenderness in the back; on some days blood was absent, but a trace of albumen was always there. On no occasion were casts or pus cells present.

Cystoscopic examination showed the escape of clear urine at regular intervals from both ureteric orifices. Nothing abnormal was seen beyond some slight congestion round the orifice of the left ureter. A skiagram showed the presence of a calculus in the left kidney, the rest of the urinary tract being quite clear.

Operation.

On May 20th, 1912, the usual lumbar incision was made, the kidney exposed and brought out on the loin. Careful palpation afforded no indication as to the whereabouts of the stone, but the radiogram showed that the stone lay about 1 in. above the lower pole. The cortex was incised along its convex border over the position of the shadow and a rough spiculated stone about ⅜ in. in diameter was removed. The cortex was sewn up by interrupted catgut stitches, the muscles brought together and the wound closed, a small rubber drainage-tube with gauze filling ("cigarette" drain) being placed down to the kidney.

After-History.

The drain was removed in forty-eight hours. The wound was quite sound at the end of ten days and the child pursued a quite uninterrupted convalescence. On the fifth day after the operation there was but a mere trace of blood in the urine and by the end of the week it had disappeared entirely.

Calculi removed (actual size).

Case I.—Composition, uric acid; weight 4 grains.

Case II.—Composition, calcium oxalate and phosphate; weight 16½ grains.

The second case came under observation on June 26th, 1912.

A boy, aged 8 years, a patient of Dr. Mumford, had suffered from occasional attacks of abdominal pain in the left side for twelve months; during the last three months the attacks had been more severe. The pain was of an aching character and was frequently accompanied by vomiting. On examination nothing abnormal was found except some little tenderness below the twelfth rib in the left lumbar region and also by deep pressure on the kidney from the front. The urine contained 0.05 per cent. of albumen but no blood. Microscopic examination was negative and the cystoscope showed no abnormality. A skiagram was taken and showed a calculus in the lower pole of the left kidney, which was slightly enlarged.

Operation.

On June 28th, 1912, a rounded, very hard spiculated stone weighing 16½ grains was removed from the lower part of the left

renal pelvis. The wound was treated as in the previous case; the child was up and about in three weeks, and left the hospital on July 22nd. He has had no trouble since that time.

Such cases impress upon us the importance of being on the look-out for renal calculi, which are probably much more common during childhood than is generally supposed. In cases of abdominal, spinal, hip-joint, or lumbar pain where the signs and symptoms are not clear, the urine should be carefully tested and a microscopic examination made. The kidney area should be closely examined and a skiagram taken of the whole urinary tract. If possible a cystoscopic examination should also be made.

If no sepsis has occurred, the prognosis is excellent. Post-operative shock is the only real danger. Heaton's second case suffered severely from shock, and Aldibert lost one case out of a series of three in children. When sepsis is present a fistula may persist—this happened in Morris's case and required nephrectomy to remedy it. Palliative treatment by alkalis and other solvents may be effective when mere sandy particles are present, but when a calculus exists of size sufficient to be shown on an *x*-ray plate, it is quite certain that nothing short of operation will remove it. It must also be borne in mind that the sooner the operation is undertaken the better the condition of the kidneys, and therefore the better the chances of success.

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THE QUALITATIVE AND QUANTITATIVE EFFECT OBSERVED ON POLYMORPH NEUTROPHILE LEUCOCYTES IN THE TREATMENT OF TUBERCULOSIS BY TUBERCULIN.

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IT is with diffidence that I desire to draw attention to the following phenomena noticed by myself in a series of cases, some of which I have not previously seen recorded. From a clinical standpoint they may have great significance. Some of these observations have not been checked, so far as I know, by other contemporary workers, and therefore require confirmation. An important change occurs in the qualitative and quantitative values of polymorph neutrophile leucocytes after tuberculin treatment in those cases of tuberculosis in which these values on investigation have been found to be poor and below the normal. No doubt this fact has been overshadowed or perhaps overlooked by workers investigating the more complex questions in relation to dosage, antibodies, tox-immunity, etc.

One phenomenon observed, due to the formation of antibodies, is the increased power of the neutrophile polymorph leucocytes to draw into their substance the invading micro-organism—a fact made use of in estimating the opsonic index.

I have repeatedly observed by a series of counts that this increased power is almost equally shared by what I term "all qualities" of neutrophile polymorph leucocytes—that is to say, by those having one or more than one nucleus. This should be kept clearly in mind, in view of the following facts which I have from time to time carefully collected, and which I think are deserving of consideration on account of their clinical significance.

First, the phagocytic value of polymorph neutrophile leucocytes in drawing into their substance tubercle bacilli is increased in proportion as the number of nuclei contained in them is also increased. This is contrary to the view held by some that those neutrophile leucocytes with more than one nucleus are examples of degenerated forms.

Counts were taken from a series of slides prepared from emulsions of leucocytes treated by control serums, and those freshly obtained from tuberculous patients. Whether the tuberculo-opsonic index was high or low, it was found that the average values were maintained throughout with little variation as follows: Taking equal numbers of the variously nucleated neutrophiles, the number of tubercle bacilli ingested by polymorph neutrophile leucocytes with one nucleus was found to be about 10 per cent., by those with two nuclei about 18 per cent., by those with three nuclei about 22 per cent., by those with four nuclei about 25 per cent., and by those with five nuclei about 25 per cent. These figures represent the combined results of all the counts made from the whole series of slides. Charts 1, 2, and 3 are some examples of the counts made from the series of slides above mentioned. Hence, instead of those

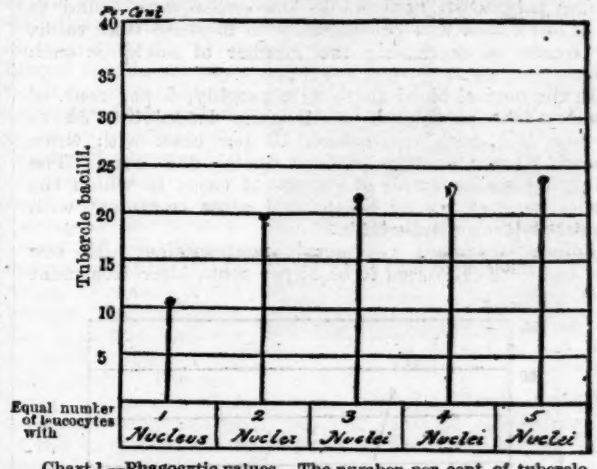

Chart 1.—Phagocytic values. The number per cent. of tubercle bacilli ingested by equal numbers of the variously nucleated polymorph neutrophiles treated with fresh serum from the blood of a phthisical patient.

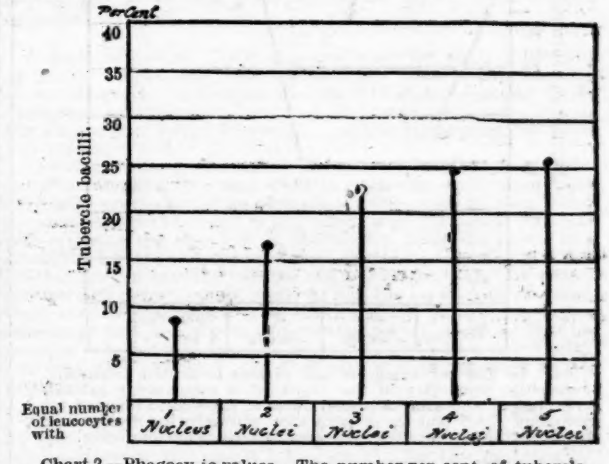

Chart 2.—Phagocytic values. The number per cent of tubercle bacilli ingested by equal numbers of the variously nucleated polymorph neutrophiles treated with the fresh serum from the blood of a healthy non-tuberculous subject.

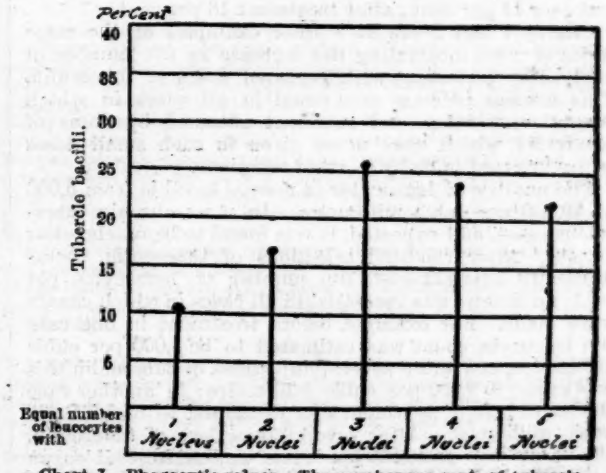

Chart 3.—Phagocytic values. The number per cent. of tubercle bacilli ingested by equal numbers of the variously nucleated polymorph neutrophiles treated with fresh serum from the blood of a phthisical patient.

with more than one nucleus being assumed to be degenerated forms, their phagocytic value proved to be actually increased; from my observations I concluded that they were also examples of more mature forms, and better fitted to carry on the defensive work in the body economy. As curious coincidences they were even occasionally found with nine distinct nuclei, arranged round the periphery of the cell, and containing a large number of bacilli; they were not unlike giant cells.

It was observed that the effect of repeated doses of tuberculin (given to a number of tuberculous patients whose polymorph neutrophile leucocytes were found to be of low value) was considerably to increase that value, by reason of increasing the number of nuclei in each cell.

In the normal blood there are, roughly, 5 per cent. of mononuclear polymorph neutrophile leucocytes, 30 to 35 per cent. with two nuclei, 40 per cent. with three nuclei, 20 per cent. with four nuclei and over. The following is an example of a series of cases in which the nuclei were estimated before and after treatment with repeated doses of tuberculin.

Before treatment polymorph neutrophiles with one nucleus were estimated to be 33 per cent., after treatment

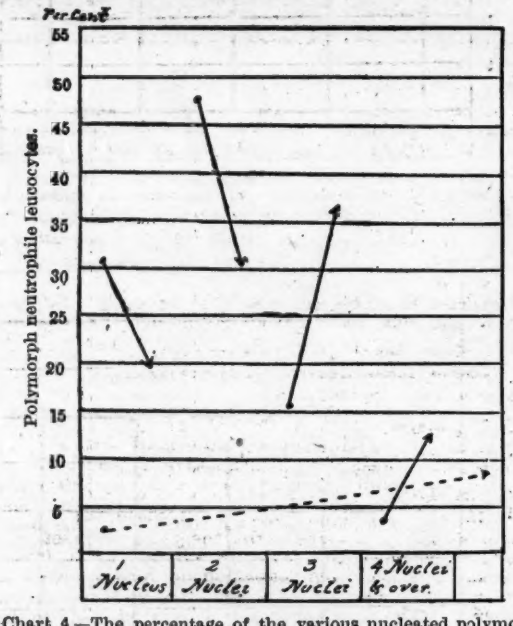

Chart 4.—The percentage of the various nucleated polymorph neutrophile leucocytes in the blood of a tuberculous patient; E. G., before and after repeated doses of tuberculin injected for treatment. 1,000 leucocytes per c.mm. shown by the broken line, indicating the increase after repeated injections of tuberculin.

9 per cent.; those with two nuclei 40 per cent., after treatment 32 per cent.; those with three nuclei 16 per cent., after treatment 42 per cent.; and those with four nuclei and over 11 per cent., after treatment 16 per cent.

Charts 4 and 5 are two other examples of the same series of cases illustrating the increase in the number of nuclei after treatment with repeated doses of tuberculin. This nuclear increase was noted in all cases in which counts were taken and reactions obtained by doses of tuberculin, which were never given in such small doses as are injected in order to avoid reactions.

The number of leucocytes in normal blood is from 8,000 to 10,000 per cubic millimetre. In most chronic tuberculous cases, as I expected, it was found to be much below normal. After repeated injections of tuberculin, therapeutically administered, the number of leucocytes per cubic millimetre was increased in all cases in which counts were made. For example, before treatment in one case the leucocyte count was estimated to be 3,000 per cubic millimetre, and after several injections of tuberculin this was raised to 9,000 per cubic millimetre; in another case the count before treatment was estimated to be 6,800 per cubic millimetre. After several injections of tuberculin, the same rose to 14,500 per cubic millimetre, and so on (*vide* Charts 3 and 4).

From the foregoing observations it may be deduced that in certain cases of tuberculous disease tuberculin treatment increases both the quality and quantity of the leucocytes. Further, since it has been shown that the more mature polymorph neutrophiles are of greater phagocytic activity, and also that the relative proportion of these is increased by tuberculin treatment, as is likewise the total number of leucocytes per cubic millimetre, the total result must be to increase the resistance of the whole body organism against the invading enemy.

These observations were made in the course of a study of the behaviour of the tuberculo-opsonic index of a number of insane tuberculous patients, who were being treated by injections of tuberculin, and were designed to assist in forming an opinion as to whether the treatment was of real benefit in such cases, since in dealing with the insane we are sometimes confronted with anomalous conditions which have to be taken into consideration in the diagnosis, prognosis, and treatment by tuberculin. The trophic centres and nervous organization generally may be so altered and possessed of such low dynamic quality that not only can the body nutrition be largely modified by the foregoing conditions, but that there may be actual wasting from this cause, apart from that caused by the presence of tuberculous foci.

The degree of malnutrition in the insane may be

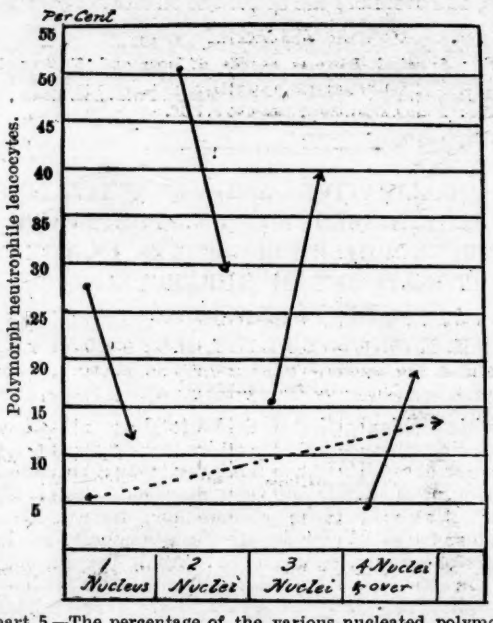

Chart 5.—The percentage of the various nucleated polymorph neutrophile leucocytes in the blood of a tuberculous patient, Mrs. S., before and after repeated doses of tuberculin injected for treatment. 1,000 leucocytes per c.mm. shown by the broken line, indicating the increase after repeated doses of tuberculin.

further complicated by persistent refusal of food, apart from any recognized definite cause. The above classes of patients, unlike those in whom the nervous organization is still unimpaired, are slow at first to gain weight under tuberculin treatment, or may show no improvement for some considerable time, or at first may even continue to lose weight, in spite of the fact that the symptoms and focal lesions show distinct and marked signs of improvement, and that the temperature, previously remittent, has steadily remained normal after treatment with tuberculin, or the tuberculo-opsonic index has been raised, and the qualitative and quantitative values of the polymorph neutrophile leucocytes have markedly increased. So, if at first the body weight and nutrition in such a class of the insane are negative or slow to improve, the eventual results justify a recommendation for the continuance of the tuberculin treatment.

UNDER the will of the late Mr. George Harwood, M.P. for Bolton, the Bolton Infirmary and Dispensary receives a bequest of £1,000.

THE General Council of King Edward's Hospital Fund for London held its usual January meeting on January 13th. The resolutions providing for the work of the current year, adopted at the meeting in December, were formally approved, and the list of appointments made to the General Council and to various committees by the governors of the Fund was read out.

OBSERVATIONS ON SUSPENSION LARYNGOSCOPY, WITH THE NOTES OF A FEW CASES.

By EDWARD D. DAVIS, F.R.C.S.Eng.,

ASSISTANT SURGEON, NOSE, THROAT, AND EAR DEPARTMENT, CHARING CROSS HOSPITAL; CLINICAL ASSISTANT (IN CHARGE), LARYNGOLOGICAL DEPARTMENT, MOUNT VERNON HOSPITAL FOR CONSUMPTION AND DISEASES OF THE CHEST.

PROFESSOR KILLIAN, of Berlin, has recently devised and adapted a new method for the examination of the pharynx and larynx. The head of the patient is suspended in an extended position in such a way as to bring the mouth, pharynx, and larynx into one line so as to obtain a direct view of these structures.

The patient lies flat on his back on a firm table, with the head and neck extended over the edge and supported

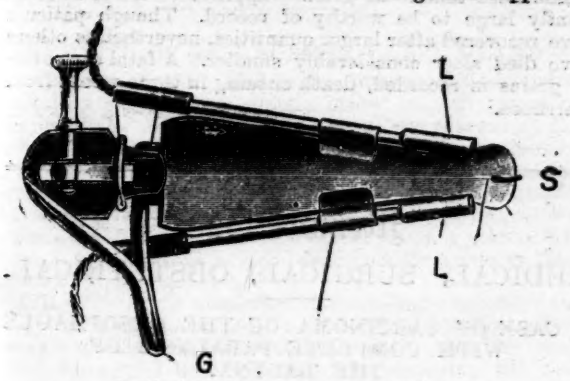

Fig. 1.—L, Lamp; G, gag; S, spatula.

by an assistant. A spatula or tongue depressor is fixed to a long handle with a hook for attachment to the horizontal bar of the stand. The spatula is placed over the tongue and epiglottis of the patient as far down as the arytenoid region. It is then attached by the hook to a horizontal bar fixed to an upright stand. When the spatula and hook are adjusted and the desired view is obtained, the assistant releases the head, which is then suspended as shown in the illustration. The arm of the hook should be inclined obliquely downwards and not hang vertically above the mouth of the patient. The mouth is gagged open by the special device with a screw adjustment attached to the handle of the spatula.

Fig. 2.—A, Handle; B, screw adjustment for gag; C, spatula; G, gag. (Pfau, Berlin.)

Professor Killian has devised fourteen different spatulae, but of these there are only four, of varying sizes, which are commonly used.

The illumination I have most frequently used is the reflected light from an ordinary forehead mirror, although in some cases a small electric torch has been found useful. Professor Killian himself uses a Kirstein head mirror and lamp, but an efficient illumination is obtained from two small lamps attached to the edges of the spatula, as shown in Fig. 1. During operations the light from the two small lamps is said to be obscured by the blood, but for demonstration purposes the illumination is extremely good. Another method of illumination is by means of a lamp fixed to the gag in the angle of the mouth.

The anaesthetic employed by Professor Killian in the majority of cases (about 50) in which this method was employed was scopolamine and morphine given two hours before operation and a second dose after one hour. The dose administered was morphine gr. $\frac{1}{6}$, scopolamine gr. $\frac{1}{200}$. Occasionally slight chloroform anaesthesia was added. In patients under 16 chloroform anaesthesia is advisable, with an addition of 8 to 10 drops of a 1 per cent. solution of codeine to restrain the cough. In the cases about to be recorded chloroform anaesthesia was used with a preliminary swabbing of the tongue, pharynx, and larynx with a solution of 20 per cent. cocaine and adrenalin.

Fig. 3.

The pharynx is perfectly seen, and a view of the posterior plate of the cricoid cartilage with the arytenoids can be obtained. The faucial tonsils are particularly well shown, and the position appears to be an excellent one to adopt for enucleation of the tonsils. The only apparent disadvantage is the unusual aspect; all the manipulations would be upside down. The base of the tongue, the vallecula, the epiglottis, and the arytenoid region are well shown. The posterior two-thirds of the vocal cords are seen under favourable circumstances, but the anterior commissure of the larynx cannot be seen even when the larynx is pressed backwards from the outside.

After a number of trials of the position on different patients the method was first employed to remove a safety pin from the pharynx of an infant aged eleven months.

CASE I.

A male infant of 11 months swallowed an open safety pin 1½ in. in length, and was immediately brought to Charing Cross Hospital. Although the child did not appear to be distressed or dyspnoeic, and the pin could not be seen when the tongue was firmly depressed, yet the house-surgeon could feel the upper end in the pharynx.

The child was chloroformed and placed in position for suspension laryngoscopy, and then the pin was easily seen lying vertically on the posterior pharyngeal wall, with its bent point uppermost and embedded in the lateral wall of the pharynx. It was opposite the opening of the larynx, with the lower end about the level of the upper edge of the cricoid cartilage. The shaft of the pin near the pointed end was seized with Patterson's forceps and pushed downwards to free the point. The forceps were then slipped down the shaft of the pin to its lower extremity, and the whole pin rotated on its point, so that its position was exactly reversed with the lower end uppermost, and was then withdrawn in that way without damage to the pharynx.

The chief advantage of the position of the patient lies in the comprehensive view of the pharynx obtained as compared with the small area visible by the oesophagoscope; also more room is afforded for the manipulation of instruments and better illumination of the field of operation is obtained.

CASE II.

A woman, aged 34, complained of smarting pain when she swallowed hot or cold fluids and of difficulty in swallowing solid food. There was distinct tenderness when pressure was applied to the cricoid cartilage, forcing it backwards on to the pharyngeal wall. Examination with the laryngoscope showed slight redness and oedema of the left arytenoid. These symptoms and signs indicated an epithelioma; accordingly, the patient was anaesthetized with chloroform and placed in the position for suspension laryngoscopy. The upper edge of a warty epitheliomatous ulcer was seen on the posterior pharyngeal wall, behind the cricoid cartilage and surrounding the lumen of the pharynx.

A piece for microscopy could have been removed with ease, but the oesophagoscope was used to complete the examination of the limits of the growth; a piece for examination was then punched out with Bruning's forceps and proved to be an epithelioma.

CASE III.

A male patient suffering from advanced laryngeal tuberculosis, with ulceration of the vallecula and of both ventricular bands. The ulcerated epiglottis had been previously removed with epiglottis punch forceps used in the usual manner.

The patient was examined in the position for suspension laryngoscopy after the application of 20 per cent. cocaine solution to the tongue and pharynx. A very satisfactory view of the larynx was obtained and it was seen to be easily possible to curette the larynx in this position.

It was proposed to do this at a later date, but unfortunately

owing to a mistake the patient was discharged before this was done. Had the operation been carried out, it was proposed to anaesthetize the patient with scopolamine and morphine.

CASE IV.

An infant, aged 4 months, presented the symptoms of laryngismus stridulus with some stridor. It was considered to be a case of infantile epiglottis with inspiratory collapse of the arytenoids.

The child was examined by suspension laryngoscopy with chloroform anaesthesia, but owing to vomiting and a considerable secretion of mucus the view was unsatisfactory. An attempt with the bronchoscope was equally unsatisfactory.

CASE V.

A boy, aged 3 years, was said to have laryngeal or tracheal obstruction, and the attacks of dyspnoea were so severe that an examination by the bronchoscope was considered necessary.

The child was chloroformed and the pharynx and epiglottis were swabbed with 10 per cent. cocaine and adrenalin solution. He was placed in the suspension laryngoscopy position, and a good view of the pharynx and arytenoid region was obtained, but the vocal cords were invisible. Accordingly the apparatus was discarded for the bronchoscope, which showed the glottis and trachea perfectly, but nothing abnormal was found.

The child was then returned to the usual prone position adopted for removal of adenoids and an adenoid growth which was previously known to exist was removed.

For cases requiring examination and manipulation of the pharynx and larynx suspension laryngoscopy will probably supersede the oesophagoscope and bronchoscope.

The comprehensive and clear view obtained, the more efficient illumination, the increased space for the manipulation of the instruments with both hands free, appeals to one who is accustomed to use the bronchoscope.

It is important to select the cases, and as a rule those patients who can be examined by the bronchoscope and its open spatula are suitable for suspension laryngoscopy. It is unnecessary to add that the new method is useless for examinations of the oesophagus and bronchi, but the bronchoscope and oesophagoscope can be used when the patient is already in the position for suspension laryngoscopy.

The patient with a large open mouth and no front teeth is excellently adapted for suspension laryngoscopy, and the suitable case will be easily recognized if a trial or a preliminary examination with an ordinary Kirstein tongue depressor is made without the use of local or general anaesthetics. Patients suffering from tuberculous laryngitis, who have been educated by frequent manipulations of the larynx make exceptionally good subjects, in addition they are not adversely affected by morphine and scopolamine. Unfavourable after-results are rare. There is no pain and the unusual position and strain on the hyoid muscles does not cause discomfort, and the tongue can be protected from the sharp lower incisor teeth by covering these with a piece of lint; as a matter of fact the tongue is not so sore as when a tongue clip has been used during a long anaesthesia.

The position is that usually adopted for cleft palate operations, but the method of fixation and gagging is a distinct improvement.

The blood can be siphoned out of the pharynx and naso-pharynx by a soft rubber tube passed through one nostril.

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Gustav Killian, *Archiv für Laryngologie und Rhinologie*, vol. xxvi, No. 2. Gustav Killian, *Berliner klinische Wochenschrift*, No. 13, p. 581.

RECOVERY AFTER TAKING 8¾ GRAINS OF CORROSIVE SUBLIMATE.

BY A. LEONARD FULLER, F.R.C.S.I.,

HONORARY ASSISTANT SURGEON, ROYAL UNITED HOSPITAL, BATH.

THE following notes are, I think, interesting in consequence of the age of the patient and the quantity of sublimate.

J. H., aged 85, had been in the habit of passing a catheter for himself four or five times during the twenty-four hours. He was a very careful and methodical old gentleman, and the soloid of sublimate containing 8¾ grains with which he made a solution for the catheter was always placed in one particular spot on his mantelpiece, whilst a cachet of urotropine, which he always took in the evening, was placed in another.

All went well for twelve years, but on the evening of February 9th, 1912, the unexpected happened and he swallowed the soloid in mistake for the cachet. The mistake was at once recognized, and he drank a tumberful of barley water, as was his custom after the urotropine, and sent for me. I arrived within half an hour and administered white of egg and water. He retched and brought up blue-stained mucus. I then passed the stomach tube and washed out the stomach with large quantities of albumen-water and milk and water. There was frequent and urgent desire for the bowels to act, but very little more than mucus was passed. The patient became extremely collapsed, he was cold and pallid, and there was a clammy sweat. The pulse was almost imperceptible and quite uncountable. I administered strychnine hypodermically and gave him milk and brandy by the mouth. Hot blankets and bottles were applied.

When I visited him the next morning he had revived somewhat, but was still in a very critical condition. The nurse told me that during the night the soiled linen was stained blue. During the next few days the bowels continued to be very irritable, but his general condition improved. Cremor magnesiae and brandy were administered in milk at frequent intervals, and he took a good deal of albumen water. After a slow convalescence he quite recovered from the effects of the poison.

The dose taken—8¾ grains—appears to me to be sufficiently large to be worthy of record. Though patients have recovered after larger quantities, nevertheless others have died after considerably smaller. A fatal case after 2½ grains is recorded, death ensuing in three weeks from diarrhoea.[1]

REFERENCE.

[1] BRITISH MEDICAL JOURNAL, 1905, vol. i, p. 767.

Memoranda:

MEDICAL, SURGICAL, OBSTETRICAL.

A CASE OF CARCINOMA OF THE OESOPHAGUS WITH COMPLETE PARALYSIS OF THE LARYNX.

COMPLETE bilateral paralysis of the larynx is so rare a condition as to merit publication of the following case.

The patient, a male, aged 52, and by occupation a coal-heaver, was first seen about the middle of July, 1912, when he came to the Stanley Hospital complaining of loss of voice, difficulty in swallowing, and obstruction to the breathing. These symptoms had developed in the order given at intervals respectively of five months, two months, and one month previously.

On examination the patient was seen to be much wasted. The voice was very weak, being little more than a toneless whisper. Respiration was impeded to the extent that, although there was no stridor, inspiration required distinct effort. No glands were felt in the neck. On attempting laryngoscopy the breathing became very difficult, and there was ineffectual coughing with purulent expectoration. After cocainization, however, a view of the larynx was obtained. Both cords were in the cadaveric position. In endeavouring to phonate they remained motionless, and in the deep, gasping inspiration which the patient took a moment later, instead of flying widely out, they merely flapped slightly downwards and inwards quite passively in response to the partial vacuum produced in the trachea.

The patient was admitted and examined with the *x* rays. An oesophageal stricture was detected just above the thoracic inlet, and, as some of the bismuth meal appeared in the bronchi, a fistulous communication between the trachea and oesophagus was diagnosed.

The patient became rapidly worse, and after a week in hospital the respiration had become distressingly embarrassed. Since the glottis was known to be fully wide enough for the respiratory needs, this difficulty in breathing was attributed to fungation of the growth into the trachea, and, in the hope of getting a tube through the obstruction, tracheotomy was performed. The operation, however, gave no relief, and the patient died a few hours subsequently.

The *post-mortem* examination revealed a growth of the oesophagus nearly 3 in. in length, and almost entirely limited to the anterior wall. The upper limit of the tumour reached to within 1 in. of the lower border of the cricoid. Anteriorly the growth had ulcerated into the trachea, largely obstructing it. After careful dissection, both recurrent nerves were found hopelessly involved, and in fact for about 1 in. of their course it was quite impossible to dissect them through the growth. The left

nerve was caught in an extension of the tumour itself just above the arch of the aorta, while the right nerve was implicated in a mass of glands behind and above the subclavian artery.

The case is, I believe, an example of a very rare condition. The chief points of interest may be summarized thus:

(*a*) Limitation of the growth to the anterior wall of the oesophagus.

(*b*) Early involvement of the recurrent nerves, leading to a change in the voice, before the onset of symptoms of oesophageal obstruction.

(*c*) Complete destruction of the function of both recurrent nerves.

(*d*) Fistulous communication with the trachea, which, however, did not occasion any pulmonary inflammation.

COURTENAY YORKE, M.D., B.S.,
Liverpool. F.R.C.S.Eng.

HYDATID OF THE SUBMAXILLARY GLAND.

THE patient, a little Kaffir girl, presented a somewhat pendulous tumour immediately below the left ramus of the mandible. It was probably about six years since the tumour was first noticed, and it had caused no symptoms. It occupied the left submaxillary triangle, and the skin over it was thin, but not adherent. It was movable, fluctuating, tense, and of regular surface. It projected a little into the floor of the mouth, but was not attached to bone. It suggested a half-buried, plastic globe of fluid about 2½ in. in diameter.

Adhesions made dissection difficult, but eventually the cyst was found to be closely related to the submaxillary salivary gland, lying below, and external to, this structure, which enveloped its upper part. In removing the cyst entire, some gland substance was damaged and snipped away.

The cyst contained 79 c.cm. clear fluid, many scolices, hooklets, and some small daughter cysts. The specific gravity of the fluid was 1005, without albumen. The wound was drained. Within twenty-four hours sufficient saliva had escaped from the wound to soak through the dressings, but on the third day this ceased, and the wound rapidly healed.

Bedford Cape. H. F. B. WALKER, M.D.Lond.

IODINE AND TYPHOID FEVER.

IN the BRITISH MEDICAL JOURNAL (1907, vol. ii, p. 143) I gave my favourable experience of the treatment of this illness by tincture of iodine. In the same volume (p. 262) Dr. David Walsh wrote in confirmation, stating what his own successful results had been, and suggested a collective investigation comprising a large number of cases treated in this very simple way.

The *Journal de médecine et de chirurgie pratiques* for December 10th, p. 967 (Art. 23868) publishes a very remarkable article which I venture to bring before the notice of the readers of the BRITISH MEDICAL JOURNAL. In it the literature of the last few years on the subject is reviewed, and the evidence is so favourable that it seems to me the time has arrived to put this method through the only practical test there is, and which Dr. Walsh suggested—that is, that the metropolitan fever hospitals, with all the means at their disposal, should undertake the treatment of a sufficiently large number of cases, well checked and observed, to pronounce definitely on its merits.

It appears to be confirmed that in enteric fever there is a marked diminution in the number of leucocytes; that iodine has a marked influence in increasing their number and thus helping in the defence of the organism invaded; that it also brings about a mononuclear reaction[1] which favours immunity.

During the last few years the administration in enteric of small and frequently repeated doses of pyramidon (⅛ to ¼ grain every half-hour) has been largely tried in France, and also in Germany as a substitute for baths in keeping down the temperature. It may be that pyramidon might be a help to the iodine treatment, but all these points can only be satisfactorily settled by large statistics. The mortality attending enteric fever leaves still much to be desired, not to say anything of the amount of extra labour attending the nursing of these cases by frequent baths and spongings, if simpler and more successful means of dealing with them can be found.

GEORGE V. PEREZ, M.B.Lond.
Puerto Orotava, Teneriffe.

[1] Labbé and Lortat-Jacob, *Presse méd.*, November 28th, 1903.

Reports
ON
MEDICAL AND SURGICAL PRACTICE IN THE HOSPITALS AND ASYLUMS OF THE BRITISH EMPIRE.

BOLTON INFIRMARY, LANCASHIRE.

A MULTILOCULAR OVARIAN CYST OF GREAT SIZE.

(Reported by RONALD BUTE MACFIE, M.B., F.R.C.S.Edin.)

THE following case, treated at the Bolton Infirmary when I was resident surgical officer thereat, presents points of interest.

The patient was a married woman, aged 42, who had only had one child, and that twenty years ago. She had never been very regular at the menstrual periods, and there had been no sign of the menses since the beginning of her existing complaint. This was twelve months previously, when she experienced vague abdominal pain and suffered from constipation.

The Conditions Found.

On examination a huge tumour was found to be occupying the abdomen, extending from the ensiform cartilage above to the symphysis pubis below, and measuring 32 in. between these two points in the median line. The umbilicus was situated 8 in. above the symphysis pubis, and at this point the tumour appeared to be somewhat elongated. The point of greatest girth was 6 in. above the umbilicus, and here the measurement was 57 in. The entire tumour was dull on percussion. There was no pain or tenderness and no marked interference with respiration or the heart's action. She was able to go about without much discomfort; in fact, when she came to seek advice she walked up to our out-patient department and showed no signs of discomfort or exhaustion. Vaginal examination revealed nothing of note; the cervix was normal in situation and character.

Operation.

The patient willingly consented to operation, and the following points of interest were revealed:

The abdominal wall was oedematous, the fat was 2 in. in depth, the musculature was very poor. There were some thin adhesions to the anterior abdominal wall from the tumour.

The tumour was tapped and its fluid contents drained off as far as possible; the tumour being then easily delivered through the wound—it was seen to be a multilocular ovarian cyst, growing from the right side and deriving its proliferant blood supply from three sources, which were: (1) The pedicle. (2) By means of a very well developed ligament of Clado (which contained an artery of medium calibre and several veins); a point of note in this region was the vermiform appendix, which was hypertrophied to almost the dimensions of the small intestine. (3) The omental adhesions.

The pedicle and omental attachments were ligated; the ligament of Clado with the appendix was then removed, and the tumour, being thus separated from all its attachments, was removed.

Size of the Tumour.

The fluid contents of the tumour measured 58 pints (7¼ gallons). Each pint weighed 1¼ lb.; so that the total weight of the fluid contents was 72½ lb. The tumour weighed 13¾ lb.; therefore the total weight of tumour and contents was 86¼ lb., or 6 st. 2 lb. 4 oz.

Remarks.

Whether the above measurements constitute a record for size and weight I cannot say, but I think the case is interesting both for the size of the tumour and its sources of blood supply.

I am much indebted to Mr. Douglas Gray for permission to publish these notes, and to Dr. Cecil Barnham for photographing the abdomen prior to operation. I should add that the patient has made an uninterrupted recovery.

Reports of Societies.

EDINBURGH OBSTETRICAL SOCIETY.

Wednesday, January 8th, 1913.

Dr. HAIG FERGUSON, President, in the Chair.

Primary Ovarian Pregnancy.

MR. GEORGE CHIENE, in a paper on ovarian pregnancy, illustrated by lantern slides, described the case of a married woman, aged 34, who was admitted to hospital supposed to be suffering from acute appendicitis. There was no amenorrhœa. Ruptured ectopic pregnancy was suspected, and, the abdomen having been opened and a large quantity of blood evacuated, a cherry-like mass was found protruding from the uterine end of the right ovary. The ovary was removed. It was cut in serial sections, and the mass was found to be blood clot, in which chorionic villi were imbedded. There was no fetus discovered. No corpus luteum nor decidual cells were present. The approximate age of the pregnancy was two to three weeks. Dr. BERRY HART said it was an undoubted case of ovarian pregnancy.

Biometrics and Pregnancy.

Dr. BERRY HART, in a paper on the insemination-parturition interval in mammals as studied by biometric curves and length of human pregnancy, said the probability curve of the figures for 912 ewes prepared by Tessier was narrow and symmetrical, like that of coin-tossing, when 50 was thrown for a certain number of times. In the figures for cattle—1,206 in all—from the Tessier and Earl Spencer series, the curve was similar, but somewhat skew. Von Winckel's 245 cases in the human, where the infants weighed over 4,000 grams, gave a probability curve less narrow and with several peaks. The majority of cases lay between the 284th and 288th days, reckoned from the first day of the last period. The minimum was 240, and the maximum 334 days. The author believed that the calculation in the human should be reckoned from the first day of the period, and the date of labour would be somewhere in the fortnight with the 280th day as its centre. The delay of the date of labour was not necessarily due to an actual prolongation of pregnancy; it might simply mean that the fertilized ovum corresponded to the next period. There was no exact number of days for the duration of human pregnancy, and the human probability curve was as yet unknown. Dr. BARBOUR thought that Dr. Hart's curves would be of small value as applied for prophesying the date of labour. They were of great theoretical interest. Dr. HAULTAIN disagreed with the belief that an actual prolongation of pregnancy might not occur, and mentioned a case where the child was two and a half months overdue, and weighed 14 lb.

ROYAL SOCIETY OF MEDICINE.

CLINICAL SECTION.

AT a meeting on January 10th, Sir WILLIAM OSLER, President, in the chair, the following were among the exhibits:—Dr. J. D. ROLLESTON: *Diphtheritic hemiplegia* in a boy, aged 5. It had occurred suddenly on the twenty-first day of the disease. Peripheral neuritis had also been present. Dr. F. PARKES WEBER: *Non-syphilitic arteritis obliterans* ("thrombo-angeitis" of Leo Buerger), with intermittent claudication of the left leg. The characteristic symptoms of the disease were: (1) Redness or cyanosis of the foot, when it was allowed to rest in a dependent position; (2) pallor of the foot on movement of the ankle-joint; (3) intermittent claudication with cramp or pain in the calf or instep on walking for a few minutes; (4) absence of pulsation in the arteries of the foot, notably in the dorsalis pedis artery. Also a case of *Chronic acholuric jaundice*, with anæmia, slight splenomegaly, and nervous disorder, in a woman aged 43. There was no undue fragility of the red corpuscles. Wassermann's test was negative. Dr. W. ESSEX WYNTER: *Acholuric jaundice* after splenectomy in a girl aged 22. The jaundice had disappeared and blood appearance improved. Dr. FILIP SYLVAN: Cases of *Pulmonary tuberculosis* before and after gymnastic treatment. In one case the vital capacity had increased from 3,100 c.cm. to 5,500 c.cm. from November 26th, 1912, to January 6th, 1913. Dr. H. D. ROLLESTON: *Actinomycosis* of the liver in a syphilitic subject. Mr. JOHN D. MALCOLM: Two cases of *Nephrectomy* for hydronephrosis, the first thirteen years and the second sixteen years after nephrolithotomy. In the latter, half the kidney only was affected, and this was removed, leaving the remainder. Mr. PHILIP TURNER: *Abscess of the liver (left lobe)*, ten years after an abscess in the right lobe. Dr. A. F. HERTZ and Dr. W. JOHNSON: *Polio-encephalomyelitis*, associated with optic neuritis, nephritis, and myocarditis and a case of *Bilateral hemiatrophy of the face.*

UNITED SERVICES MEDICAL SOCIETY.

AT a meeting on January 8th, Fleet Surgeon BASSETT-SMITH, President, in the chair, Lieutenant-Colonel G. DOUGLAS HUNTER, R.A.M.C., in a paper on the *Tactical employment of field medical units*, said instruction in this subject should consist not merely in the learning of principles, but in the application of these principles to the solution of concrete problems. This could be attained in peace, by the working out of the disposition of medical units on the map according to definite schemes of attack and defence, by staff rides, and by subsequent conferences to discuss the points raised. As regards the preliminary measures in real warfare, great stress was laid on the importance of intimate co-operation between the A.D.M.S. and the divisional commander and his staff. The success or non-success of the medical arrangements would depend upon whether the A.D.M.S. thoroughly grasped the situation and comprehended the object which the commander had in view. As to the points to be dealt with in operation orders for medical services, these might be tabulated as follows: The body of troops each medical unit would serve; the times and order of march; the area allotted to each unit, with limits of frontage if possible; sites of dressing stations (these might be laid down beforehand in operations of defence, but rarely in those of attack); the place to and roads by which field ambulances would evacuate their wounded; site of divisional collecting station; places to which reports and messages to the A.D.M.S. should be sent. During the actual fighting the A.D.M.S. would have to leave the actual collection and removal of the wounded to the initiative of the officers commanding field ambulances and the regimental medical services. He himself must be mainly concerned in co-ordinating the work of the different units under his command with the requirements of the fighting troops and in endeavouring to maintain the link between field medical units and the clearing hospitals. Whatever the method of evacuation adopted it was imperative that the field ambulances should be cleared, so as to be ready for a further immediate advance after a successful attack. The A.D.M.S. or his staff officer should always remain at divisional head quarters so as to receive messages from the medical units and take action on the information as it came to hand. At present the means of communication between him and the officers commanding field ambulances were somewhat limited, and it was hoped that there would be improvement in this respect. The medical units in reserve should be in convenient situations, and the A.D.M.S. should always keep in hand as large a reserve as possible to provide for emergencies as they arise. It should be remembered by medical officers that needless exposure of themselves or the bearers to the enemy's fire was unnecessary and reprehensible.

MIDLAND OBSTETRICAL AND GYNAECOLOGICAL SOCIETY.

AT a meeting at Bristol, on December 6th, 1912, Dr. WALTER SWAYNE, Vice-President, in the chair, the following were among the exhibits:—Dr. PURSLOW: (1) A specimen of *Tubal pregnancy* exhibiting both threatened abortion and rupture. The patient, a multipara aged 37, five days before her admission to the Queen's Hospital, Birmingham, on March 19th, 1912, was seized with abdominal pain, and uterine haemorrhage occurred one week before the expected period. On the day of admission a much more severe attack occurred, and at the time of operation the patient presented all the signs of severe internal haemorrhage.

The specimen showed a mass of blood clot protruding from the ostium of the Fallopian tube, and also a rent in the wall of the ampullary portion of the tube through which a fetus of eight weeks' development had escaped in its amnion. (2) A uterus the seat of a fibroid undergoing *Necrobiotic degeneration*, removed during the puerperium. The tumour had caused obstruction to the passage of the fetal head, and the question of Caesarean hysterectomy was discussed. Owing to the exigencies of the case, unfavourable surroundings, and absence of fetal heart sounds, it was decided to deliver by the vaginal route. This was accomplished with some difficulty, after version had been performed. The patient made an afebrile recovery, and the uterus containing the fibromyoma was successfully removed during the fourth week of the puerperium. Dr. WALTER SWAYNE: A specimen of *Spontaneous rupture of the uterus* at the thirty-eighth week of pregnancy. The fetus and its membranes had partially escaped into the peritoneal cavity through a stellate laceration at the fundus large enough to admit almost three fingers. The patient, a multipara, aged 37, had been curetted two years previously on account of a septic incomplete abortion, but the exhibitor did not think that the uterus had been perforated upon this occasion, as the curettings showed only endometrium, and no muscular tissue. The patient was admitted to the Bristol Royal Infirmary with a diagnosis of concealed accidental haemorrhage. The uterus was removed by Porro's method, but the patient was moribund, and expired at the close of the operation. Mr. BECKWITH WHITEHOUSE: A specimen from a case of splenectomy in a 6-para, aged 30, who complained of severe abdominal pain of sudden onset, with urgency and difficulty of micturition, and presenting a large, solid tumour firmly impacted in the right iliac fossa. The spleen weighed 2 lb. 10 oz. The uterus was markedly retroverted. The patient had made an uninterrupted recovery after the operation, and had continued well. Dr. NEWNHAM described a case of *Foreign body in the peritoneal cavity*. It was a bone crochet needle, which had been introduced into the vagina by the patient in order to procure abortion. Examination under an anaesthetic and exploration of the uterus failed to produce the foreign body, and it was thought that the story was fallacious. The needle was eventually located by the *x* rays, and laparotomy successfully performed for its removal. There was much peritonitis present.

HUNTERIAN SOCIETY.

AT a meeting at St. Bartholomew's Hospital on January 8th, Mr. A. H. TUBBY, President, in the chair, Professor ARTHUR KEITH delivered the second Hunterian Lecture on the history and nature of certain specimens alleged to have been obtained from the *post-mortem* examination of Napoleon the Great. It was reported in full in our issue for January 11th, at page 53. Dr. ARNOLD CHAPLIN, in proposing a vote of thanks, congratulated Professor Keith on the able way in which the whole subject had been treated. At the same time it did not appear to him that the evidence offered as to the authenticity of the specimens sufficed to outweigh the documentary evidence in existence, and which pointed in the opposite direction. The Hunterian Society was, nevertheless, indebted to Professor Keith for the lecture, which was one of the most important and notable contributions to the closing periods of "St. Helena history" that had yet been made.

LONDON DERMATOLOGICAL SOCIETY.

AT a meeting on December 17th, 1912, Dr. MORGAN DOCKRELL, President, in the chair, a discussion took place on the *Anomalies of pigmentation*. To get a clear comprehension of these, the PRESIDENT suggested that as the best classification all pigmentary diseases should be divided into hypertrophic and atrophic, and that each of these be subdivided into congenital and acquired. Under hypertrophic the congenital included the different variety of moles, the acquired being subdivided into lentigo and chloasma. Chloasma would then be, first, idiopathic with its divisions of traumatic and toxic, and secondly, symptomatic with its divisions of uterine and cachectic. As for atrophic forms, leucoderma represented the congenital and partial, albinism the congenital and universal, the acquired variety being known as vitiligo. Dr. BUNCH, discussing etiology, referred to the popular theory as to the origin of birthmarks through maternal influences on the embryo. He had not been convinced as to the truth of this idea, and mentioned the case of the negress who had black and albino children alternately. Dr. GRIFFITH dwelt on the histology of the pigmentation; and Dr. SIBLEY, discussing treatment, divided the cases into two classes: (1) Those with a loss of pigment, and (2) those with excess of pigment. In the first group, such as leucoderma, he had been able to bring back the pigment by prolonged hyperaemic treatment of the area. For removal of excessive pigment he referred to the application of solid carbonic dioxide, electrolysis by means of multiple needles and ionization, especially with perchloride of mercury, all of which processes he found curative for different forms and degrees of localized pigmentary deposit.

ASSOCIATION OF REGISTERED MEDICAL WOMEN.

AT a meeting held on January 7th the PRESIDENT (Dr. Constance Long) read a paper on *Scopolamine-morphine in labour*. She had used these drugs in private practice in 15 selected cases. Labour had not been prolonged beyond the average time, nor had the infant been in any way endangered, in spite of a certain amount of cyanosis at birth. The dangers to the child had been overstated by British writers. Scopolamine was a perfectly safe drug for the mother, provided its dosage were understood; for the safety of the child the initial dose of $\frac{1}{6}$ $\frac{1}{5}$ grain of morphine should not be repeated. The effect of the drug in modifying labour pains, combined with the amnesia commonly produced, might abolish the dread of parturition, and thus induce a rise in the birth-rate. The constant attendance of the physician was not essential, provided an intelligent nurse was in charge; the patient should be kept on her side until the effects of the drug had passed off, and the same precaution should be observed with regard to the infant. Mrs. MEAKIN HAARBLEICHER gave an account of the use of scopolamine at Krönig's Hospital, Freiburg. There practically all parturient women were given the option of being put under the influence of the drug, provided no contraindication were present—for example, primary inertia, general debility, placenta praevia. In eclampsia it had been found beneficial. The injections were commenced when the pains became regular and disagreeable to the patient. In about 76 per cent. of cases the action of the drug had been typically successful. Although the patients had been roused by each pain and had been able to answer questions, yet it was found afterwards that they had no memory whatever of the period of labour. No prolongation of labour was noticed. The drug was not found to affect the secretion of milk nor the involution of the uterus; the kidneys were not affected, nor was there any tendency to femoral thrombosis. Some 13 per cent. of the children were born asphyxiated, though this condition could in many instances be traced to causes other than the drug. Infant mortality had been shown by Gauss to be lower in cases treated by scopolamine than in others. Dr. MAY DICKINSON BERRY described the administration of anaesthetics at the Mayo Clinic, Rochester, Minnesota; only *open ether* was used, and it was administered by trained nurses. For operations on the stomach $\frac{1}{4}$ gr. morphine was injected half an hour before their commencement. Light anaesthesia was aimed at, and the amount of ether used was small, 4 oz. in thirty to fifty minutes being the average. No account was taken of the eye reflexes.

PART 2, volume I, of the *Tropical Diseases Bulletin*, deals with papers on plague, undulant fever, filariasis, helminthiasis, and splenomegaly. Adequate abstracts are given of the different papers, so that a man working in the tropics, far away from any library, may keep fully up to date in any or all of the subjects dealt with. In other numbers malaria, trypanosomiasis, beri-beri, and the other subjects that make up tropical medicine, will be treated.

Reviews.

THE GROUNDWORK OF SCIENCE.

MR. WESTAWAY'S book on *Scientific Method*,[1] although primarily adapted to the needs of science teachers, deserves the attention of all who are interested in the principles which underlie and regulate modern investigation. The subject, of course, recalls Professor Karl Pearson's *Grammar of Science*, but the treatment is entirely different, being in the main historical. The author keeps his own views in the background, allowing the numerous authorities quoted, as far as possible, to speak for themselves. His reading has been extensive; and by judicious choice of representative passages a very clear and comprehensive idea of the evolution and present position of scientific method is conveyed to the reader, while in his comments upon doubtful points and antagonistic opinions he proves himself a sound and capable critic.

The book is divided into four sections, of which the first deals with the philosophy and the second with the logic of scientific method. The third gives illustrative passages from the works of scientific discoverers, and the fourth discusses the principles and practice of science teaching. The author holds that the ultimate aim of science is "to reduce the complexities of nature to their fundamental elements, and to express in an exact and quantitative form the relations among those elements." And since the necessary division of labour involved by this task leads to a constant increase of specialism, there is an obvious danger that, in the absence of some contrary influence, the whole will be lost sight of by reason of attention to the parts. This contrary influence is supplied by philosophy, to which the author assigns the rôle of critically examining the hypotheses and results of the scientific specialist, and, so far as may be, co-ordinating them into a self-consistent system of knowledge.

Some twenty pages of the first section are devoted to Lord Bacon; and in these the author gives a good account of the strong and weak points of the Baconian doctrine. It was not merely the insistence upon the necessity of proceeding from the facts of experience that was novel in this doctrine—many of the ancient thinkers had recognized that. But whereas Aristotle, for example, from a cursory consideration of such facts, had rushed immediately to the most general conclusions, Bacon clearly saw and strongly enforced the indispensability of a more cautious and gradual ascent from the particular to the universal. As might have been expected, his attempt to formulate clear directions for the achievement of this end are imperfect and obscure; but there can be no doubt of the soundness of his view as to the importance of the elimination of the non-essential. On the other hand, Bacon seems to have seriously contemplated the possibility of exhaustively cataloguing the facts of nature, and, thereafter, in a few years, by the almost mechanical application of his method, attaining to something little short of omniscience. He also failed to appreciate the scientific utility of deduction and imaginative insight.

In the section dealing with logic there is a full and clear description of the rules formulated by Mill for the guidance of scientific investigators, commonly known as the canons of induction. These comprise five methods of procedure—namely, that of agreement, of difference, the joint method, the method of residues, and the method of concomitant variations. On analysis, however, the first two are found to form the basis of all Mill's rules. In the main the author considers them useful rather as models and tests of logical proof than as practical guides to discovery.

In the chapter dealing with analogy there are some judicious remarks on the fallacies that result from a loose and undiscriminating employment of that somewhat dangerous method. Because two things resemble one another in certain respects, it is not safe to assume, as is commonly done, that they may be regarded as to all intents identical.

Some interesting reading will be found in the third section, mainly consisting of excerpts from the writings of such men as Guy Lussac, Boyle, Newton, and Faraday. In the last section, devoted to science training, the author advocates the heuristic method, of which Professor Armstrong is a well known pioneer. This involves the placing of students in the attitude of discoverers, making them find out things, as far as possible, for themselves.

[1] *Scientific Method, its Philosophy and its Practice.* By F. W. Westaway. London: Blackie and Son. 1912. (Post 8vo, pp. 449, figs. 24. 6s.)

SYPHILIS.

A VOLUME of contributions to the pathology and treatment of syphilis, by a number of writers, embodying the work on experimental syphilis carried out in Java during the years 1905 to 1908 and continued at Breslau, by Professor NEISSER and his assistants, has been issued.[2] In the introduction Professor Neisser gives a graphic account of the Java expedition and details concerning the methods of work. The first part of the book deals with experimental inoculation of apes and the results derived therefrom. The chief of these are briefly as follows: Positive inoculations were obtained with human syphilitic material from primary, secondary, and tertiary lesions of the skin, primary and secondary glands, the blood from the organs and also from the nasal mucus from cases of congenital syphilis; with material from syphilitic apes, from the liver, spleen, bone-marrow, ovary, testicle and glands, and also with material from rabbits inoculated with syphilis. As regards the semen, although Finger succeeded in obtaining positive inoculations, Neisser's were all negative, but he obtained positive results by inoculation with ape's testicle. The bearing of this on the question of paternal transmission is mentioned. The length of the incubation period and the results of inoculation were found to depend largely on the quantity of spirochaetes inoculated. It was found that the spirochaetes became generalized before the appearance of the primary sore, an observation which accounts for the usual failure of excision of the chancre. Subcutaneous inoculation was usually negative, but occasionally positive; intravenous inoculation, on the other hand, was generally positive, but intraperitoneal inoculation was always negative. The vitality of the spirochaete was destroyed by drying the material by exposure to a temperature of 10° C. for three hours and by keeping on ice for twenty hours. Material from chancres and condylomata, when kept moist, remained virulent for six to ten hours, and living spirochaetes were found in a still-born fetus fifty hours after birth. The evidence went to show that there is no true immunity in syphilis; when a case is cured reinfection may take place. There is a condition of "anergy"—that is, a state refractory to fresh inoculation as long as the virus is present in the body, but this condition is relative and not absolute, for superinfection is possible, at any rate in the tertiary stage. Attempts to produce both active and passive immunization failed, and also attempts to produce a vaccine; no attenuation of the virus took place after passage through animals. Neisser considers that the severity of syphilis among Europeans in the tropics is due more to their mode of life than to any special malignancy. The disease was comparatively mild among the natives, although tertiary lesions of the bones were common; syphilis of the nervous system was rare, and tabes and general paralysis unknown, possibly owing to the absence of alcoholism. In the next part of the book, which deals with treatment, Neisser points out that the earlier treatment is begun in trypanosome diseases the more rapid is the cure. The action of mercury and arsenic is discussed, and the results of treatment by the numerous organic preparations of arsenic are given. Six apes are said to have been cured by a single injection of arsenobenzol (salvarsan). Quinine was found to have neither a preventive nor a curative action on syphilis, but potassium iodide, contrary to the accepted belief, showed evidence of direct action on the spirochaete. Neisser recommends, therefore, that iodides should be given in the early stages. Although in favour of arsenobenzol, he concludes that this must be combined with mercury and iodides. The next part of the book deals with serum-diagnosis, and is written by Bruck. The

[2] *Beiträge zur Pathologie und Therapie der Syphilis.* Unter Mitwirkung von Drs. G. Bärman, C. Bruck, Dohi, Kobazashi, Kuznitsky, Pürekhauer, Halberstädter, Prowazek, Schereschewsky, und Siebert. Herausgegeben von Dr. Albert Neisser. Berlin: Julius Springer. 1911. (Imp. 8vo, pp. 624.)

percentages of positive Wassermann reactions given are 94.1 for secondary, 73.9 for tertiary, and 50 to 60 for latent syphilis. As a rule the reaction does not appear till the sixth week after infection. Bruck remarks that the evidence afforded by serum diagnosis is against the frequency of paternal transmission, though it does not exclude the possibility. He looks upon the reaction as a guide to treatment, and holds that treatment should be continued till the reaction is found, by repeated examination, to be permanently negative. The book concludes with several shorter articles written by other fellow-workers. This record of Professor Neisser's valuable and painstaking researches will form one of the classics of modern syphilology.

Drs. McINTOSH and FILDES in the preface to their work on *Syphilis from the Modern Standpoint*[3] announce that they are not carried away in the flood of enthusiasm which overran the medical world when Ehrlich's discovery was promulgated. They have striven to make a critical survey of the enormous mass of literature on syphilis, to confine themselves to actual facts and to draw logical conclusions from these promises. The true history of syphilis, they say, dates from 1903, the year of the discovery of the spirochaete; up till that date treatment was empirical, since then it has been scientific. The authors are rather sceptical as to the claims originally urged, perhaps in the first flush of excitement, that permanent rapid cures were certain to follow the administration of salvarsan. More might have been made of what has been rightly enough styled a "revolution in the treatment of syphilis." The book, however, is not directly concerned with the cure of syphilis, but rather with the study and destruction of the *Spirochaeta pallida*, though the two subjects appear to be complemental. The researches recorded in the work were conducted in the laboratories of the Pasteur Institute in Paris, and have been continued in the laboratory at the London Hospital. The work is a thorough, painstaking, and practical review of the subject; it is devoid of unnecessary embellishment and detail and every page tells. To those desirous of a clear statement of the new theories and lucid presentment of the new facts this book can be most confidently commended. The volume is well arranged and from the bibliographical point of view complete. Some photographs of the recent German workers in syphilology are given.

Professor ZINSSER'S book[4] on syphilitic affections of the mouth and affections resembling them, is an interesting contribution to syphilography. The introduction deals with the discrimination between the *Spirochaeta pallida* and other spirochaetes found in the mouth—the *S. buccalis* and the *S. dentium*. The former is easily distinguished by being thicker and larger, with fewer and flatter and more irregular spirals. The *S. dentium* is more difficult to distinguish, and it resembles the *S. pallida* more than any other form of spirochaete. It is, however, shorter, with more closely approximated spirals, and has less tendency to lateral bending movements. The diagnostic value of the Wassermann reaction is next discussed, and the author wisely remarks that this reaction is of use only when taken in conjunction with the whole of the clinical picture. In fact, he regards a positive Wassermann reaction as of similar value to a positive history of syphilis. The next part of the book comprises a concise and clearly written account of primary, secondary, tertiary, and congenital syphilitic affections of the buccal cavity. With regard to congenital syphilitic teeth, besides "Hutchinson's teeth," the author considers that hypoplasia of the crown of the first molar, and sometimes of the lower incisors, is pathognomonic of congenital syphilis. Other abnormalities of dentition he regards as of doubtful syphilitic origin. The third part of the book deals with the various buccal affections, which may be mistaken for syphilis, and their differential diagnosis. Attention is drawn to the danger of syphilitic infection of the mouth through the medium of dental and other instruments. Professor Zinsser's book, which is profusely illustrated with forty colour process plates, should be especially useful to dentists, to whom a knowledge of the various syphilitic affections of the buccal cavity is indispensable.

[3] *Syphilis from the Modern Standpoint.* By James McIntosh, M.D.Aberd., Grocers' Research Scholar, and Paul Fildes, M.B., B.C.Cantab., Assistant Bacteriologist to the London Hospital. London: Edward Arnold. New York: Longmans, Green and Co. 1911. (Demy 8vo, pp. 243; plates 8, figs. 5. 10s. 6d. net.)

[4] *Syphilis und Syphilisähnliche Erkrankungen des Mundes.* Von Professor Dr. T. Zinsser. Berlin und Wien: Urban und Schwarzenberg. 1912. (Super roy. 8vo, pp. 146: 44 plates, 40 coloured. M. 15.)

THE TREATMENT OF CANCER.

IN a volume entitled *The Enzyme Treatment of Cancer and its Scientific Basis*[5] Mr. J. BEARD, D.Sc., has set forth at much length his views on the subject indicated. The book consists largely of annotated references to the author's own writings, added to similarly annotated accounts of what has been said by others regarding his views. It appears to be designed for the information both of the general public and of the medical profession. It is written in a discursive style, and contains a superfluity of references to the facts or theories of the higher physiology, and may therefore not receive from either class quite as much attention as its author would presumably wish, or as it possibly deserves. Summarizing the author's expressions of his views, but utilizing as far as possible his own phraseology respecting them, it may be said that Mr. Beard's treatment of cancer seems to be based upon the application of a trilogy of doctrines—namely, evolution with predestination, the morphological continuity of germ cells, and an antithetic alternation of generations. This trilogy is in effect an indivisible unit, which owes its existence to the author of this volume, though in respect of one of its components he was anticipated, he says, by Weismann. On this basis Mr. Beard set to work to deal with the problem of cancer, advancing his forces along the only two lines by which he deemed it open to attack—namely, embryology and stereochemistry—and together they have achieved the complete overthrow and decisive rout of cancer. The latter phrase, as also most of the others in the foregoing sentences, is that used by the author himself, but it is not to be concluded therefrom that Mr. Beard in any wise suggests that it represents a common view. On the contrary, he makes it clear that though his treatment has at one time and another been tried by quite a large number of workers, the opinions they have subsequently expressed have in most instances been entirely unfavourable to it. The most notable exception is an army officer who some two years ago reported a case of sarcoma treated on the system in question with great success. Though the results of this case were certainly confirmatory of Mr. Beard's views, one or two swallows do not make a summer, and the general impression left by the book can best, perhaps, be described as agnostic. Real knowledge of the chemical biology of abnormal growths is still in the making, and, despite the fact that many workers, of an industry and ability not less than Mr. Beard's own, hold that his views are entirely erroneous, it is possible that one day or other they may be proved to have contained the germ, at any rate, of the final solution of the cancer problem. Meantime, all that can be said is that the clinical results as a whole are far from an encouraging kind; indeed, one would regard them as totally condemnatory but for one circumstance. There is no more certain way of strangling a possibly valuable idea than premature attempts to apply it in practice, and it seems possible that Mr. Beard's conception may have suffered from this cause. The book, at any rate, makes it obvious that when Mr. Beard first invited a general trial of his method he himself was not very clear as to how it should be applied or even as to the part which trypsin and amylopsin respectively should play therein. Even after this latest exposition of his views a careful student might be puzzled as to the precise lines on which he should endeavour to carry them out. For the rest, Mr. Beard's disappointment that the greatness of his achievement has not been generally recognized is quite comprehensible, but in the circumstances it is on his own head rather than on those of the medical profession that the vials of his wrath should be poured.

[5] *The Enzyme Treatment of Cancer and its Scientific Basis.* By John Beard, D.Sc. London: Chatto and Windus. 1911. (Demy 8vo, pp. 308; figs. 11. Price 7s. 6d. net.)

DENTAL SURGERY.

Die Missbildungen des Gebisses[6] is one chapter of a comprehensive treatise on the morphology of deformities of man and beast, edited by Dr. ERNEST SCHWALBE of the Rostock University. The writer, Professor PECKERT, has made an extended study of the literature (chiefly of the German literature) of the subject, and having himself a good experience, has succeeded in producing a valuable monograph. He opines that the cause of a great part of all tooth deformities is mechanical, and first makes itself felt when the question of room becomes acute. He finds the origin of some in an earlier period of development than is by many believed; thus gemmation is referred to the time of root development, and the formation of a follicular (dentigerous) cyst to some unknown force interfering with the early tooth germ. The short notice of "degenerate jaws" shows the wide divergence of opinion which exists as to the origin of misshapen palates. The author ascribes considerable importance to rickets, but thinks heredity plays an undoubted part. He inclines to the belief in the connexion between idiocy and ill-formed jaws; but we believe it has been demonstrated that the jaws of idiots are generally large and well-formed. The author has tried to exclude all deformities due to post-natal illness, and has not taken cleft palate as part of his domain. The deformities of animals receive but small attention.

In the preface to *The Extraction of Teeth*[7] Mr. J. H. GIBBS (Edinburgh) tells us that his only justification for adding still another to the list of books upon the extraction of teeth is that he has something new to say. If this were truly his only justification publication of the book is hardly vindicated. Most of the author's points are, at least in the London dental schools, current teaching; certain of them are, indeed, as vigorously combated by some as upheld by others. The author believes he breaks new ground in advising the use of single-bladed "root" forceps for all teeth, many-rooted and single-rooted alike, and thinks to have discovered a new method of use. This is explained on p. 73: "In the case of the (upper) molars and praemolars firm steady upward pressure is made and whilst maintaining the upward pressure the tooth is moved steadily outwards in one movement . . ." The beginner's fault lies in relaxing the upward pressure as soon as the outward movement is begun, with the result that the lingual blade slips. To those who use the "old-fashioned" molar forceps this upward force is an unnecessary violence, and it is difficult to understand Mr. Gibbs's objection to the employment of the molar forceps on the plea that it is impossible to estimate the strength of a decayed molar crown. This use, however, of none but root forceps; disuse of the elevator; avoidance of "pull"; disbelief in the local use of opium, are no new things in the south. An illustration on p. 68 shows a method of grasping upper root forceps which seems to be both new and useful. From p. 123 we appear to learn that Mr. Gibbs considers dislocation of the mandible a common accident of tooth extraction. He rightly condemns the use of chloroform, but fails in his criticism of local anaesthesia by injection through ignoring regional anaesthesia. The style of the book is rather too rhetorical. On the whole and in spite of the criticisms just made, the book is worth the reading, yet it cannot be said to mark any great advance in the art of tooth extraction.

Dr. HOFFENDAHL'S handbook of dentistry[8] for medical practitioners is, so far as it goes, interesting and practical. He strongly denies the existence of the so-called disorders of dentition, and supports his position well. He gives useful and minute advice concerning the causes of toothache and the temporary treatment of teeth, and as to extraction and the means of producing local anaesthesia. He is convinced of the necessity of a full set of teeth, believing that the loss of but few entails destruction of the remainder. He urges immediate replacement of a lost tooth. The argument is well set out, but does not stand in the light of experience or of a full knowledge of dental sepsis, and it is in this direction that the book fails. To the author leucoplakia is a mystery, but he has never examined it in the light of dental sepsis. Malignant tumours are mentioned, but the author has not observed their intimate relation to dental sepsis. Finally, out of 160 pages but one is given to tooth affections as the cause of diseases of other organs, and in this there is no note of diseases of blood, intestines, etc., except that "chronic indigestion is often caused by masticatory failure."

Mr. STEWART LERVY MCCURDY of Pittsburgh has written *Oral Surgery*[9] as "the first of a series of textbooks which has been planned by the Commission on Textbooks of the Institute of Dental Pedagogics." The book is divided into two parts—"Principles of Surgery" and "Oral Surgery," but it cannot be said that the author displays profound knowledge of either subject. As examples, under "inflammation" (pp. 7 and 8), we read of contraction, dilatation, and degeneration of vessel walls of the arteries, and the only mention of capillaries occurs in connexion with diapedesis of red corpuscles; under "diagnostic signs" (p. 83) we learn that "strabismus is usually of no particular importance." On p. 376 we read of fibrinous ankylosis of the temporo-maxillary articulation; on p. 423 of the "hypoglossus muscle." The author holds that the floor of the orbit may be pushed up by pus in the antrum and the eyeball displaced (p. 344). He appears to be ignorant of the epithelial nature of a dental cyst, describing it (p. 297) under "cysts from the roots of developed teeth"; "it is," he says, "doubtless caused by irritation and infiltration at the apex, as an apex cyst, following the removal of a nerve and filling the root canal." On p. 200, in the course of a chapter on bone regeneration, we are told that "the new bone, known as cloaca, is deposited in concentric layers." There are some good photographic illustrations (though the attempt to photograph intra-oral conditions fails), among them that of an impacted first lower permanent molar; and there is an interesting description of a method of wiring fractured mandibles by means of which the author has obtained brilliant results.

That *Mouth Hygiene* was written by Dr. MARSHALL[10] as much with the view of educating the public as of providing the dental profession with a not too technical book on mouth hygiene and mouth sepsis may, perhaps, stand as an excuse for the statement (p. 94) that "many children habitually breathe through the mouth, simply because they have not been taught to breathe through the nose, and not because there are any obstructions in the nasal passages"; and even of the description of antral abscess (p. 136) from which we learn that pent-up pus in the antrum may cause protrusion of the eyeball. A better excuse is found in the author's sincere desire to spread a knowledge both of the evils of mouth sepsis and of the means of prevention, evidenced by such vigorous language as "The only obstacles in the way of a complete revolution in this matter (the prevalence of mouth sepsis) are indifference, prejudice, and ignorance"; and in his outspoken advice to operating surgeons. He thinks stiff bristles will pass "between the dental interspaces"—but, surely, at most they will but begin to enter. In our experience the large brush he advocates for adults is entirely a mistake; a small one allows of far greater freedom of movement. Dr. Marshall served in the United States Army, and we note that during the Spanish-American war from 10 to 12 per cent. of the force was constantly incapacitated for duty by reason of dental disease. The book should do much to effect among the thinking public the revolution Dr. Marshall so ardently desires, and doctors and dentists will find in it much useful information.

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[6] *Die Missbildungen des Gebisses.* Von Prof. Peckert in Tübingen. *Die Morphologie der Missbildungen des Menschen und der Tiere.* Herausgegeben von Dr. E. Schwalbe. IV Lfg. 2 Abteilung, 5 Kapitel. Jena: Gustav Fischer. 1911. (Sup. roy. 8vo, pp. 60; figs. 58.)

[7] *Extraction of Teeth.* By J. H. Gibbs, F.R.C.S., L.R.C.P., L.D.S. Edin., Dental Surgeon, Edinburgh Royal Infirmary, etc. Edinburgh: E. and S. Livingstone. 1912. (Demy 8vo, pp. 165; 53 illustrations. 7s. 6d. net.)

[8] *Taschenbuch der Zahnheilkunde fur praktische Aerzte.* By Dr. Kurt Hoffendahl, teacher of dentistry in the Kgl. Friedrich Wilhelms University of Berlin. Berlin and Vienna: Urban and Schwarzenberg. 1912. (Cr. 8vo, pp. 160; illus. 47. M.4.)

[9] *Oral Surgery: a Textbook on General Surgery and Medicine as applied to Dentistry.* By Stewart Lervy McCurdy, Professor of Anatomy and Oral Surgery, School of Dentistry, University of Pittsburgh, etc. New York and London: D. Appleton and Co. 1912. (Demy 8vo, pp 492; 228 illustrations. 12s. 6d. net.)

[10] *Mouth Hygiene and Mouth Sepsis.* By John Sayre Marshall, M.D., Sc.D., Syracuse University, Capt. (retired) U.S. Army, formerly Examining and Supervising Dental Surgeon, U.S. Army. Philadelphia and London: J. B. Lippincott Co. 1912. (Demy 8vo, pp. 274; figs. 12. 6s. net.)

Under the title *Preservation of the Teeth*[11] Captain EUSTACE LEES has devised in durable book form a dental history sheet which is prefaced by a note on dental hygiene. By the use of abbreviations the history of each tooth can be succinctly recorded, and the author rightly thinks this may be of considerable service, when change of locality necessitates change of dentist.

NOTES ON BOOKS.

THE edition of *Nisbet's Medical Directory* for 1913[12] has been issued. The first edition was published in 1908, and the regular annual appearance of the volume shows that there is a demand for a condensed publication of this kind. It consists of two parts; the first is a directory in a single alphabetical arrangement of medical practitioners with the address and the principal appointment held, and a note of the principal book or paper published. The second part is a local directory, in which the names are classified under places of residence. The book is well printed on thin paper, and is very convenient to handle.

The thirty-second volume of *The Transactions of the Ophthalmological Society of the United Kingdom*[13] covers its proceedings during the session 1911–12, and contains as many as seventy-six communications, a considerable proportion being illustrated by charts, diagrams, *x*-ray pictures, and coloured plates. Included is the report presented by the council of the society at its annual meeting, showing a satisfactory financial position and a membership of over 500. Owing to the holding of the International Medical Congress in London next summer, it was decided to postpone the delivery of the next Bowman Lecture until 1914.

Books that Count[14] is, we gather from the preface, intended primarily to help the ordinary reader and the young student to ascertain quickly the aim and scope of the books dealing with various departments of learning "which treat their subjects on broad lines and in point of knowledge, research and reflection approximate to standard value." It may be described as an expansion of the idea of the "hundred best books" applied to biography, fine arts, geography and travel, history, literature, medicine, music, philology, philosophy, religion, science, sociology, and sports and pastimes. It includes brief accounts of about 5,500 books. The labour of compilation must have been very great, and, as far as we have been able to test the lists, the particulars given are accurate. But the selection of books often reminds one of Louis Veuillot's lines:

> Qui me dira comment se fait l'Académie,
> Pourquoi Pantoufle en est et Sabot n'en est pas?

In several of the subdivisions of the section devoted to medicine the "books that count" are conspicuous by their absence, while a place is found for some which certainly cannot be said to "approximate to standard value." To doctors, therefore, the list is of little value, while for the public the books included are too technical. In other sections, notably those of history and literature, much of the information given as to the purpose and general character of the books mentioned is likely to be useful to readers who are not experts. To them, indeed, the work may be recommended as a conveniently condensed *Conversationslexicon* on books in the English language.

Dr. H. J. MACKAY, who is Assistant Director of Medical Services for the Wessex Division of the Territorial Forces, has brought out a second edition of *Improvised Methods of Aid in the Field*.[15] It is intended for the use of members of voluntary aid detachments and others, and despite its extreme portability contains an immense amount of information on the subject of devising ways of safely transporting patients, extemporizing hospitals, and other like matters. It is in Germany perhaps that this subject has been chiefly studied, and the book contains a useful summary of recent German and other Continental literature dealing with it.

There is a certain type of novel that deals with events so far removed from the sober commonplaces of everyday existence that it comes under the heading of romance rather than of fiction. To this class belong many of Mr. and Mrs. EGERTON CASTLE'S clever stories, particularly their latest, *The Grip of Life*,[16] which deals with the gradual awakening of a bookish young don to the stern realities of life. The cause of this awakening is his unexpected accession to a baronetcy, together with the sudden advent of two women into the world he has made for himself in his library; and between them they bring about the metamorphosis of the lonely student into the country squire, the worthy head of an ancient house. This development from the chrysalis into the butterfly is not accomplished without the shattering of many cherished illusions; but Sir Ughtred Maxwell has been born under a lucky star, and is weaned in time from the guilty passion that threatens to poison his existence by the sane and wholesome affection of the generous hoyden whom he finally marries. His emotional sufferings are many and varied enough to satisfy the most inveterate novel reader. The book has much of the rather artificial charm which has characterized its predecessors, and if it does not actually enhance at least should not detract from the reputation of its popular authors.

MEDICAL AND SURGICAL APPLIANCES.

A New Tourniquet for Use in Intravenous Injections.

MR. R. H. JOCELYN SWAN, M.S.Lond., F.R.C.S., London, has designed the pneumatic tourniquet here illustrated for use in giving an intravenous injection. He had found on more than one occasion that after having passed a cannula needle into a vein, the movement during the release of the ordinary rubber tourniquet resulted in the needle piercing the wall of the vein or even leaving the vein; the pneumatic tourniquet was devised on this account. It is described as follows by Mr. Swan: It consists of a tube of firm rubber connected by a smaller tube to an inflating ball. In this smaller tube is placed a three way valve tap so that the pneumatic tube can be inflated, kept filled or deflated, by a very small movement of the handle of the tap. The pneumatic tube is loosely attached to a firm band of webbing fitted with a buckle to fix on the upper arm. In use the webbing band covering the tube is fixed loosely in position and the latter inflated by pressing the ball; the valve is turned into the mid position, and in a few seconds the veins are made prominent. After the selected vein is punctured, the valve is again turned to the third position when the tube becomes deflated and the venous circulation of the limb recommenced and the injection given. The deflated tube remains in position until the injection is finished, in this way obviating any movement of the limb whilst the needle is *in situ*, the whole cycle being worked by the operator with ease. I have used this tourniquet now many times and find it answers all the requirements I wished. This appliance has been made for me by Mr. J. H. Montague, 69, New Bond Street, W.

[11] *Preservation of the Teeth, with Charts to Record their Past and Future Treatment.* By Eustace Lees. Wolverhampton: Alfred Hinde. London: Simpkin, Marshall, Hamilton, Kent, and Co. 1912. (Post 8vo. 1s. net.)

[12] *Nisbet's Medical Directory, 1913.* London: James Nisbet and Co. (8vo, pp. 926. 8s. 6d.)

[13] *The Thirty-second Volume of the Transactions of the Ophthalmological Society of the United Kingdom.* London: J. and A. Churchill. 1912. (Demy 8vo, pp. 473; plates 26. Price 12s. 6d. net.)

[14] *Books that Count: A Dictionary of Standard Books.* Edited by W. Forbes Gray. London: Adam and Charles Black. 1912. (Cr. 8vo. pp. 707. Price 5s. net.)

[15] *Improvised Methods of Aid in the Field.* By H. J. Mackay, M.D., Col. A.M.S.T.F. Second edition. London: Eyre and Spottiswoode, Ltd. 1912. (Post 16mo, pp. 160; illus. 81; diagrams 2. (Price 1s. 6d. net.)

[16] *The Grip of Life.* By Agnes and Egerton Castle. London: Smith Elder, and Co. 1912. (Demy 8vo, pp. 406. Price 6s.)

THE late Miss Mary Houldsworth, of Rozelle, Ayr, bequeathed £500 each to the London Hospital and the Hospital for Sick Children, Glasgow, and directed that a like sum should be paid to any hospital founded in Glasgow and conducted by homœopathists.

THE Ilford Company has issued a new catalogue giving full particulars of its well-known photographic plates for *x*-ray work, and of some additions thereto. By way of showing the capabilities of these plates, some excellent reproductions are supplied. Copies of the catalogue can be obtained on application. The address of the company is Ilford, Essex.

BOARD OF EDUCATION.

FOURTH ANNUAL REPORT OF THE MEDICAL OFFICER.

(Concluded from page 80.)

"Following Up."

IN his opening remarks on the subject of "following up" Sir George Newman states that the experience of each year has served to bring into stronger relief the place, importance, and purpose of "following up" the ailing or defective child until it receives the treatment of which it stands in need. The evidence available, he suggests, indicates that medical inspection has served to awaken and develop, rather than to weaken, the feeling of parental responsibility. In many parts of the country parents are taking keen interest in inspections and their results. Teachers are also co-operating admirably. The assistance of a school nurse in following up is probably indispensable, but her work should not overlap that done in the sanitary department of the area. Close co-operation between the medical officer and the attendance officer is also of importance. In many areas a large amount of work in the nature of "following up" is being done by voluntary agencies. The medical officer himself has a double duty; he should definitely supervise all the agencies employed by the authority in "following up," having the work done by these agencies recorded on some systematic and simple method. Once he has detected a defect or disease in a child he should keep that child under his observation until he is satisfied that its condition has been remedied, or he finds reason to believe that nothing can be gained by further following up the case. Some figures supplied with references to 35 "typical" areas would seem to suggest that in many of them a considerable proportion of recommendations have been followed by actual treatment; but the figures given are not added up nor are any percentages given, so in this as in many other connexions the reader is left without any precise guidance as to what is the position of affairs.

Medical Treatment.

The sections on medical treatment commence with a chapter setting forth the powers possessed by local authorities in the matter, and what steps they have generally taken. The aims of treatment are discussed; the defects and disorders that have to be dealt with are often merely incipient, or otherwise not serious in themselves; but even if they hardly require to be remedied on their own account, their underlying causes must be seriously considered, the aim being to build up the resistance of the child and to obtain a healthy school population. A very small gain in this direction may spell a disproportionately large gain in the physical health capacity and energy of the people as a whole. Remedies adopted under the medical treatment of school children can seldom be those which can be quickly applied and immediate in effect. They must be of a preventive nature and include a training in hygiene and in habit—in the hygiene of the skin, the eye and ear, and of the teeth—and in the habit of life which affects the organic systems of the body—the muscular, digestive, and excretory systems, the heart and lungs. Measures such as the provision of a pair of spectacles or the extirpation of adenoids are but the beginning of treatment.

Nurses.—During the year under consideration eighty-five authorities received permission to employ school nurses in treatment as well as inspection. "There is hardly any more economical expenditure in relation to school medical work than that laid out on an efficient nursing staff."

Spectacles.—In a considerable number of areas permission has been accorded for the provision of spectacles, subject to the condition that they have been prescribed by medical men of suitable experience, and that, when possible, parents shall be made to contribute towards the cost of them. Children provided with spectacles should be re-examined at intervals, and all points connected directly and indirectly with defective vision kept under consideration. The findings of the committee of the British Association in regard to the influence of school work on eyesight are quoted at length. One of them was to the effect that a serious cause of visual defect was that the books provided were not printed so as to be easy to read.

Ringworm.—A considerable number of authorities have been permitted to provide themselves with special *x*-ray clinics, and the number that made arrangements for *x*-ray treatment of ringworm of one kind and another increased during the year. No dependence can be placed, it is stated, upon a cheap installation, but, given an apparatus mechanically perfect and an intelligent operator, there should be no difficulty in curing practically every case of ringworm within, it is said, five weeks.

Contributions to Hospitals.—It is suggested that the wisdom of the Board in sanctioning arrangements with hospitals for contributions, either as a sole or as one of several means of providing medical treatment for school children, has been amply confirmed. Altogether thirty-one authorities received the sanction of the Board for such arrangements during the year ending July 31st, 1912; besides these, a very large number of other authorities were using hospitals for the treatment of their children. Hence, despite the fact that in some areas the medical staffs or governors of the local hospitals have declined to undertake the treatment of school children, thereby compelling the authority to make its own arrangement, tens of thousands of children in the country have received such treatment, and the voluntary hospitals have thus made a very large contribution towards the immediate relief of ailing school children.

The Board's dealings with the London County Council in regard to its medical treatment schemes are described. It is admitted that a composite scheme is inevitable in London, and in a general way the Board would appear to be satisfied that the present arrangements secure skilled treatment and an adequate degree of control over the various institutions on the part of the Council. An impression is left that the Board is disposed to be more exacting in its requirements in regard to treatment centres than in respect to hospitals.

School Clinics.

The considerable extension during the year of the work of the inspection clinic is regarded by the Board with much satisfaction. At these inspection clinics children noted to be defective at ordinary inspections are further examined, and they form the centres from which all work in the nature of "following up" is controlled. In large towns and in country areas it is useful to have several of them. The establishment of thirty treatment clinics had been authorized down to July 31st, 1911, the end of the school year, and from a list supplied of all those sanctioned up to the end of the following year there would appear to be fifty-six of these institutions now at work under the aegis of the Board. It is held that it is especially the treatment of minor ailments which should be kept in view at these institutions. At some of those which are described in detail and with approval, charges, we note, are made. How they are officered is seldom stated. Generally the treating medical officer would appear to be the school medical officer, aided by clinical assistants, or a health visitor or nurse, or the deputy school medical officer similarly assisted.

Dental Disease.

Stress is laid on the prevalence of dental disease, it being suggested that high as are some of the figures (these indicating on the average of a large number of areas that only 5.6 per cent. of children of school age have sound teeth), the real prevalence is even higher, because the school medical officer at his routine inspection is only likely to note teeth whose decay is easily observable. The prevalence appears to be slightly less in country than in urban schools. Certain reports also reveal some ground for holding that children artificially fed during infancy develop dental caries more readily than others. In a good many areas toothbrush drill and toothbrush clubs have been established. Dental treatment is carried on apparently at about half the school clinics. It is indicated that while many of the causes of dental decay are beyond the control of education authorities, it is feasible to deal with caries in its earliest stages in newly-erupted teeth of the permanent set, with results which are fully commensurate with the expenditure involved. It is on such teeth that attention should be concentrated. Two rooms are required at a clinic for dental use, though they need not necessarily be used solely for that purpose. Their equipment costs between £20 and £40. One dentist working five days a week, or several part-time dentists working for an equivalent

period, should be able to deal effectively with a school population of some 3,000 to 4,000 children. Those who perform the work should be responsible not only for the treatment, but also for selection of the children to be treated. They should be regarded as part of the staff of the school medical officer, and do their work under his general supervision, as only thus can the unity of the school medical service be preserved and due consideration secured for the collateral issues raised by dental disease.

Special Schools.

There are 331 schools classed as special—namely, 36 for the blind, 48 for the deaf, 169 for the mentally defective, 62 for the physically defective, 2 for the phthisical, 6 for the epileptic, and 8 for those requiring open-air treatment. The total accommodation is for 25,266 children, and fifty-two of the schools are maintained by voluntary contributions. Further accommodation is likely to be required. Before the year 1908 only well-marked cases falling into well-defined groups were sent to such schools, but now new and formerly unrecognized cases requiring special educational arrangements are being brought to light by medical inspection. The duty of a school medical officer is to discover subnormal children, make a precise diagnosis of their condition, determine the medical treatment appropriate thereto, and arrange for or afford any medical treatment required.

Deafness.

It is stated that the cost of educating deaf children is not likely to decline or even to remain stationary. Only about 50 per cent. of those who are totally deaf and who have been taught speech on the oral method seemingly use speech after leaving school; but of those who are partially deaf and who have been taught in the same fashion practically all take advantage of their education on this point.

Epilepsy.

It is stated that such after-care returns as are available render it fairly certain that for cases of epilepsy which are at all severe there is usually only one end, whatever be their mental condition—namely, colony life.

Mental Subnormality.

Children in this category are divided into four classes: Dull or backward, feeble-minded, imbeciles, and idiots. Reasons are given for assuming that, leaving out the dull and the ineducable, there must be at present some 24,000 children whose mental condition demands that some special form of education should be provided for them, and for about half this number some kind of provision seems already to exist. In regard to diagnosis, stress is laid on the value of the system of Binet as a means of classifying the mental ability of any given child; and it is suggested that in many areas observation schools—that is, schools to which children could be sent before deciding finally on securing their admission to a special school—would be very useful. The sections on this subject end with an extensive series of desiderata.

Open-air and Allied Schools.

The movement in favour of open-air education is, it is stated, beginning to spread through the schools of the country, some advantage, however small, being taken of whatever facilities exist for open-air training. Stress is laid on the advantages of this fact both to the children themselves, and as bringing nearer the day when the public at large will regard open air as an essential factor in the life of a healthy person. Numerous examples are given of ways in which open-air conditions are being secured. A further type of school, some examples of which already exist, is the "School of Recovery"—a residential school designed for the education and prolonged physical treatment of children whose health is under par from any cause. Sanatorium schools are foreshadowed in a chapter describing how they should be built, officered, and managed.

Mother-craft.

Stress is laid on the value of schools for mothers, and it is indicated that the Board is prepared to make grants to these institutions. It is suggested that it would be of great advantage if the work related not only to infants, but to children, and regret is expressed that at present it is impossible to exercise any compulsion over actual or prospective mothers. It is also pointed out that it would be of advantage if all children could be kept under skilled observation from their birth up to the time when they already come under the care of the local education authority. Teaching of infant care in elementary schools is useful, but it would be much more useful if continuation classes in this subject were arranged.

Juvenile Employment.

A long chapter is devoted to the subject of juvenile employment, among the suggestions made being that the time has arrived when the information obtained with regard to the children who are about to leave school should be handed on to juvenile employment committees and other like bodies, that steps should be taken to co-ordinate the work of school medical officers and factory surgeons, and that all children who are employed, though still of school age, should attend the school medical officer's inspection clinic as "specials."

Provision of Meals.

The final chapter in the report deals with the question of the provision of meals. It is stated that in some places where meals are provided insufficient care is taken in the way they are served. The children should not only be fed, but be taught how to behave at meals, and to acquire a taste for simple cookery. The provision of meals should not be regarded as a form of Poor Law relief, their true purpose being to ensure that a child's capacity to profit by the opportunities of education afforded to it is not lessened by its being insufficiently or otherwise improperly fed. No meal arrangements can really be satisfactory unless the school medical officer:

1. Has the right to nominate for school feeding any children found at the routine medical inspection or on special examination to be suffering from malnutrition due to insufficiency or unsuitability of food.
2. Is always consulted as to the dietary provided.
3. Has the right and duty of inspecting the actual arrangements made in regard to the preparation, distribution, and service of the meals.
4. Is consulted in all cases of doubt as to the necessity for retaining a child on the feeding list owing to its physical condition.

Before concluding this summary it should be noted that scattered throughout the report are notes as to the information obtained either by Sir George Newman or members of his staff during official visits last year to the Continent, United States, and Canada.

INTERNATIONAL CONFERENCE ON POST-GRADUATE MEDICAL INSTRUCTION.

DURING the International Medical Congress, August, 1913, a conference on post-graduate medical instruction, in connexion with the meeting of the International Committee, will be held in London. Under the auspices of the Privy Council, a British committee, composed of the British delegates to the International Committee and of representatives of post-graduate medical schools has been formed, with Sir William Osler as chairman, to make the necessary arrangements for the conference.

The following programme has been drawn up by the International Committee, of which Professor von Waldeyer is president and Professor Kutner, Berlin, is secretary:

I. *Reports:*
- Topic 1.—The curriculum of medical education in the United Kingdom.
- Topic 2.—The present condition of post-graduate medical instruction in the United Kingdom.

II. *Discussions:*
- Topic 3.—The reforms in the present methods of instruction necessary to ensure technical proficiency in the general branches of medical practice.
- Topic 4.—The importance of the sociological aspects of medicine (public health, school hygiene, tropical disease, health insurance, physical training, etc.), in post-graduate medical instruction.

Reports on Topics 1 and 2 will be prepared by Sir Henry Morris and Dr. C. O. Hawthorne respectively. The discussions on Topics 3 and 4 will be introduced by speakers

appointed by the International Committee; Sir Clifford Allbutt will take part in the discussion on Topic 3. The British Committee will be pleased to consider offers of short papers relating to the discussion on Topic 4. In connexion with Topic 2, the British Committee will be glad to receive syllabuses of post-graduate medical courses from any institution which through oversight has not already been communicated with. An abstract of all the syllabuses will be published as a part of the Transactions of the Conference.

The honorary secretary of the British Committee is Major C. E. Pollock, R.A.M.C., War Office, Whitehall, S.W.

MEDICAL SERVICE IN THE HIGHLANDS AND ISLANDS OF SCOTLAND.

(Continued from p. 99.)

In our last issue a short account was given of the first volume of the report of the Commission which, under the chairmanship of Sir J. A. Dewar, M.P. for Inverness, has been inquiring into the conditions of medical service in the Highlands and Islands of Scotland, issued a few days earlier. The report which was issued on January 13th is of great importance, and there is good reason to hope that its recommendations will lead to a bettering of the conditions.

Scope and Method of Investigation.

The Committee decided to take evidence from the counties of Argyll, Caithness, Inverness, Ross and Cromarty, Sutherland, Orkney and Shetland, and from the Highlands of Perthshire, areas in which isolation, topographical and climatic difficulties, and straitened financial circumstances are found most generally in combination, and therefore areas generally within which the question of adequate medical provision is most pressing. The instruction to the Committee was to consider how far the provision of medical attendance in districts situated in the Highlands and Islands of Scotland is inadequate, and to advise as to the best method of securing a satisfactory medical service therein, regard being had to the duties and responsibilities of the several public authorities in such districts.

With the view of facilitating the inquiry and rendering the collection of information more systematic, two sets of Query Schedules were prepared and issued to all medical men, with few exceptions, practising in the counties above referred to, and to other persons known to be conversant with the problem to be investigated. In all 260 schedules were issued—102 to doctors and 158 to other persons. Of these 87 were returned, duly answered, by doctors and 144 by others. It was decided that the Committee should visit the area of the remit in order not only to take oral evidence on the spot, but also to investigate as far as possible, and by actual observation, the various difficulties connected with medical provision in the localities where they were understood to be particularly urgent. This most praiseworthy decision cost those Commissioners who were not good sailors many hours of discomfort, but they have the satisfaction of knowing that they sacrificed to Neptune in their country's cause. The total number of witnesses examined was 258, selected from all classes of the community and with due regard to the various interests involved.

Special Problems.

The report emphasizes the fact that the Highlands and Islands present special features which demand special consideration. The great part of the area investigated is sparsely populated, and in many cases there is no doctor within twenty or thirty miles. In winter especially travelling is difficult, owing to the peculiar geographical configuration, with the result that not alone isolated homesteads, but fairly populous districts, may be for lengthened periods without any means to relieve suffering or stay otherwise preventable disease. This is borne out by the evidence of a Rona fisherman, who said:

> It is just the Portree doctor we have, and he must come in a boat, and in the winter time he cannot come. We may possibly have to wait a fortnight for him, and the patient will be suffering pain all the time. It is quite possible the patient may die without seeing a doctor at all.

Dr. Cochrane, Shetland, said:

> I have known a case being without medical attendance there (Papa Stour) for eighteen days simply because they could not cross the Sound.

Dr. Roger McNeil, Medical Officer for the County of Argyll, said:

> The population is so scattered that only a comparatively small number are within reasonable touch of a doctor in any one locality. . . . The difficulty of communication sometimes makes it impossible to get medical attendance in time to save life. I know myself of two such cases which occurred in the Island of Colonsay, before a resident doctor was provided, where two married women died before a doctor could be got from Islay, leaving two young families of seven and five, ranging in age from birth upwards, uncared for.

Poverty of the Crofters.

Under such conditions the cost of medical aid must obviously be high, and in the great majority of cases even prohibitive. The bulk of the people are, over large sections of the area, in very straitened circumstances, especially at certain seasons of the year, and are consequently unable to pay for medical attendance even when the fee, having regard to time and distance, is quite inadequate to compensate the doctor. Ready cash is a rarity with the ordinary crofter, and the amount is at most so small that when he has provided for the necessaries of life and paid his rent and rates, he has, as a rule, little or nothing left to pay the doctor. The medical evidence was unanimous on this point, one witness declaring that a doctor might count practically on 30 per cent. of his work being gratuitous work, while some placed the number of unpaid visits as high as 76 per cent.

In these circumstances medical treatment becomes eleemosynary, and there is conclusive evidence that, even on that basis, it is not available for a large number of cases of illness, especially among poor non-pauper people. According to the testimony of witnesses, such cases constitute a large percentage of the population, and the high percentage of uncertified deaths is further conclusive evidence in the same direction.

Insanitary Dwellings.

The report refers to the housing problem as lying close to the root of the whole matter. To take one instance: In recent years the Island of Lewis has been reported on unfavourably as having dwellings in a grossly insanitary condition; a paragraph from the last report of the medical officer of health on Lewis is quoted, as follows:

> Houses of practically only one room, with damp walls, damp clay floors, sunless interiors, a vitiated and smoky atmosphere, and the cattle under the same roof with the human inmates, the surroundings usually badly drained, and the site often damp. When a case of phthisis occurs in one of these houses isolation is impossible. In too many cases the patient spits on the floor, and on the floors of churches and meeting places, scattering tubercle bacilli all round. When one considers also the probability of the cattle being affected with tuberculosis, under the conditions prevailing what could we expect than a wide prevalence of the disease?

Primitive Customs and Habits.

Some curious examples of the lingering belief in inherited skill and traditional "cures" are given. A witness from the remote island of Rona (Skye), which a doctor rarely visits, was particularly interesting in a description of some of the various "cures" which, in default or disregard of medical advice, are frequently resorted to. He told, for example, of a "cure" recently applied in the case of an epileptic; it consisted of burying a black cock alive beneath the spot where the patient had had the first attack of epilepsy. He also described the successful treatment of a woman suffering from "King's evil" by a seventh son, to whom she had gone all the way to the Island of Scalpay, Harris. On this branch of the inquiry Dr. Tolmie, South Harris, said:

> When they have bone disease, they use the old remedies. . . . There was a man suffering from keratitis, and he was not getting well. It is a difficult disease to cure in an old person. He was not getting on, and I had to go one very wild day to see him, and when I arrived he was away from home—it was a fearful day—and he had to drive nine miles and walk about another to an old lady at Lieisto. The old lady made up some rhyme and mixed grasses with water and sand, and sung. He came back and said he was better. The seventh son is supposed to be able to cure such disease. I know of one case of a person who had a carbuncle on the back of his neck, and it did not

heal, and he got a seventh son to come to his house, and every night for a long time he put cold water on it and a sixpence round his neck.

Inferior Diet.

The character of the food consumed, especially by the children, seemed to the Committee a relative fact of serious import. It was brought out that in South Uist no meal is ground, the surplus sheep and cattle are sold for urgent cash, every egg is bartered for shop commodities, and the milk supply is insufficient, especially in winter. The excessive indulgence in over-brewed tea, especially by children, is deplored by several witnesses. Dr. Murray wrote:

The great feature in the decadence of the school child's menu is the abuse of tea. The good old porridge pot has fallen from its high estate, and the tea-pot has been exalted in its place. Probably 50 per cent. go to school on a breakfast of tea and loaf bread, the former usually being brewed. . . . A large proportion of the children live so far from school that they cannot get home for a mid-day meal. These may walk from one to two and a half miles to and from school in all sorts of weather, and they work at their lessons all day on an inadequatebreakfast. . . . All this works untold mischief, and it is impossible for the average child—say, in the afternoon—to be in a fitly receptive condition for education.

Tuberculosis often attacks those who are insufficiently nourished, as the examination of Dr. Reardon, South Uist, shows:

Have you much tuberculosis?—Yes.
Both kinds?—Yes, pulmonary and non-pulmonary.
Is it increasing?—I am sorry to say it is.
What do you blame?—To begin with, there is no foundation for the children. The mothers don't nurse their children, and at the age of three months they are supposed to be able to take porridge and sops. The reason for that is that the milk of their cows is given to their calves, and there is no milk for the children. It is a case of the survival of the fittest.
They are rearing calves instead of rearing children?—Yes.
Why do the women not nurse their children?—They are not able; they have not the strength.

Parish Councils Overburdened.

So far the parish councils are the only public bodies that have taken any steps towards the provision of general medical attendance on the inhabitants, but the report declares that any further strain on their resources, under existing conditions, seems in most places out of the question. Speaking of the effect of the Insurance Act, the report continues:

The industrial situation in the crofting districts renders the National Health Insurance Act much less operative in the Highlands and Islands than in other parts of Scotland. Except for casual employment and short periods of service at such occupations as ghillieing and occasional fishing, the crofting population is out-with the compulsory provisions of the Act. The amount of voluntary insurance is at present negligible, and there is reason to believe that in some cases the contributions made during the temporary employment referred to may not be supplemented by the number of contributions necessary to entitle such insured persons to the minimum benefit under the Act.

The general opinion of the witnesses examined in this matter was that any system of insurance by voluntary contribution would, in the economic conditions obtaining among the crofter population, have but little chance of success.

Conclusions.

To summarize the foregoing conditions, which make medical provision in the Highlands and Islands a special problem, the Committee put forward certain conclusions; these will be found on p. 98 of the JOURNAL of January 11th.

Conditions Affecting the Adequacy of Medical Service.

The report next proceeds to examine the conditions affecting the adequacy of medical service, among which are mentioned defective means of locomotion and communication. The advantages of motor cars or boats are reviewed, as is the necessity for an extended telephonic service. The lowness of the average doctor's income is illustrated, cases being cited where the gross income is only £100 per annum, yielding a net weekly wage of between £1 and 30s. A prominent witness, after stating that in many parishes the doctor does not earn more than £50 to £70 a year, went on to say:

In one island that I know the doctor only gets £5 a year from the parish council, and I am sure he cannot make more than £40 a year. He lives alone, and when I called he had his coat off and his sleeves up, and was cooking his dinner.

In view of the inadequacy of his remuneration, it is not surprising to learn that the average doctor is seldom able to take a holiday. The cost thereof, including the fee for a locumtenent, is beyond his means.

This is regrettable in many respects. An annual holiday of, say, four weeks would go far to mitigate the disadvantages of isolation, and to relieve the strain of medical practice.

In connexion with the foregoing the Committee put forward the opinion that the general efficiency of the medical service is impaired by certain conditions which were noted on p. 98 of the JOURNAL of January 11th.

Percentage of Uncertified Deaths.

One of the most conclusive proofs of the inadequacy of medical attendance is the number of uncertified deaths. For the whole of Scotland during the past five years the average of uncertified deaths was about 2 per cent. In the insular rural districts of the county of Ross during 1908–10 the percentage was 47.5 of the total, ranging from 69 per cent. in Uig to 17 per cent. in Stornoway. On the mainland the percentage in some places was as high as 80.9. Many witnesses were disposed to attribute the failure to call a doctor and the consequent non-certification to a fatalistic attitude towards death in the case of the aged, while others put it down to poverty, and also to inaccessibility. Whatever the cause, the report states that "the evidence is cumulative that there is a vast amount of illness among poor non-pauper people not medically attended." Some witnesses put such cases as high as 50, and even 75 per cent. Again, the frequent reference in the evidence to the habitual delay in calling in the doctor, even when there is no fear of a fee, is attributed not alone to apathy or ignorance or poverty, but to an attitude of patience in suffering which has been evolved from the lack of medical advice and assistance in the past.

Popularity of Patent Medicines.

An interesting and not unimportant type of evidence, it is pointed out, indicating inadequacy of medical attendance, is the brisk trade in patent medicines which has developed in recent years, and more particularly in the case of quack medicine of American manufacture.

We are told that the quantity of such medicine sold is much more than that supplied on a doctor's prescription. This practice of self-doctoring is increasing, and will so continue so long as the need to which it owes its origin is not more adequately met by the provision of skilled medical attendance.

NEED FOR TRAINED NURSES.

The Committee states that no matter affecting the welfare of the people of the Highlands and Islands is more urgent than the provision of an adequate supply of trained nurses. Any provision which exists at present is based on the voluntary efforts of individual benefactors and philanthropic agencies, and a tribute is paid to the public spirit and generosity displayed by many proprietors, shooting tenants, and others, in providing nursing attendance for these poor people.

The report suggests a classification of the nursing service as maternity nurses, cottage nurses, and fully trained nurses. As a proof of the insufficiency of the existing supply of nurses, the following passages may be quoted:

Dr. Ross (Barvas) described the attendance of crofters' wives on one another as a "social danger." In North Harris, Dr. Macleod informed us that not only a neighbour, but occasionally even the husband, was the only attendant in confinements, and that in the absence of any trained nursing only a small proportion of these cases received any skilled attendance. He mentioned that he had known of the deaths of as many as three mothers in twelve days. Another doctor told us of a case where a woman, at the crisis of her confinement, read out to her husband from a medical treatise directions to enable him to afford her the necessary assistance.

Evidence was forthcoming from witnesses representing several other parts of the area as to serious, sometimes fatal, results from the lack of skilled nursing. Father McNeill of Eriskay, after stating that the infant mortality there was abnormally high, informed the Committee that no doctor had attended a maternity case on the island for the last seven years, and that on one occasion, when no other help was available, he "had to bring out the medical dictionary and to take it to the schoolmaster to get him to attend." He further stated that last year, out of eleven deaths on the island, no less than five had been of infants under twelve months, and that he attributed this to the lack of a competent person to advise the mother.

The Committee is therefore satisfied:

1. That the total number of nurses is quite inadequate.
2. That in a great part of the area of the inquiry the efficiency of nurses suffers from lack of organization.
3. That, while tending generally to alleviate suffering and remove danger in sickness and disease, efficient nursing is at present urgently required in connexion with:

(*a*) The birth and infancy of children.

(*b*) The "following up" and treatment of diseases and defects in children as disclosed by school medical inspection.

(*c*) Promoting among the people a knowledge of personal and household hygiene, dietary, etc.

(*d*) The earlier detection of illness.

Recommendations.

It accordingly recommends:

1. That all existing voluntary nursing agencies, where practicable, be organized under a county or district scheme, but that, in order to retain local interest and support, the system of local nursing committees be continued and encouraged. Such nurses could, by arrangement, be utilized by public bodies under such a scheme, and the public bodies in question could have representation on the Management Committee.
2. That the total number of nurses be largely increased, and that the claim of island communities receive special consideration.
3. That nursing be regarded as an integral part of the medical service, and that in the discharge of her duties the nurse, through the organization, be directly responsible to the medical attendant.
4. That a suitable lodging or residence be provided for the nurse.
5. That the telegraph-telephone system now in use in many parts of the Highlands and Islands be made available for telephonic communication in connexion with the nursing service.

NEED FOR HOSPITALS.

Discussing the need for hospitals, the report says:

Both lay and medical witnesses strongly urge the necessity of providing cottage hospitals, within easy reach or erected near a doctor's residence, and in charge of a competent nurse. At present cases like the following are reported: "I have had to operate in a hut on a case of strangulated hernia, where a clerk gave chloroform, and light was obtained from a tallow candle, held by a neighbouring crofter, who fainted during the proceedings!"

The Committee is quite satisfied from the evidence on these points that the existing general hospital provision is quite inadequate, even if available in every case to the fullest extent of its capacity; that there is urgent need of further provision, and that such provision should be mainly in the form of cottage hospitals, and for the following special purposes:

(*a*) To bring near to the doctor a distant case of illness requiring frequent visits.

(*b*) To provide for the removal of patients from conditions which render medical treatment futile.

(*c*) To reduce the cost and danger of travel entailed in removal from outlying parts to most of the existing hospitals.

(*d*) To provide a home for the district nurse and a dispensary for the doctor.

Recommendation.

It is accordingly recommended:

That cottage hospitals be erected at various convenient centres, and of such a size as to accommodate from two to four patients, with a nurse and necessary assistance, and to provide a local dispensary for the doctor; and that the provision of tuberculosis hospitals, more particularly in the larger islands, should receive special consideration.

PROVISION OF MEDICINES.

The question of the provision of medicines and medical appliances is discussed at some length. The Committee notes that, while there is some evidence by druggists to indicate that the dispensing of drugs by doctors is regarded more or less as an encroachment on the druggists' proper sphere, yet so-called "counter prescribing" and advice by druggists are not uncommon. The report suggests that the provision of cottage hospitals at convenient centres would largely meet the difficulties as to prompt delivery of medicine, while the doctor might have a chest containing a small stock of the more important drugs conveyed on his motor car.

EFFECT OF THE INSURANCE ACT.

Before suggesting improvements the Committee examine the existing organization of medical services, which are: (*a*) Public health service, (*b*) school medical inspection, (*c*) health insurance medical service, (*d*) medical service under the Poor Law, (*e*) general medical practice, and (*f*) specialized medical service. The correlation of these services with a view to their administrative consolidation, and the provision of more satisfactory financial basis for private practice is fully expounded by Dr. Leslie Mackenzie, a member of the Committee, in an appendix to the report.

In regard to the insurance medical service the report says:

Though this branch of medical service has not yet come into operation, it has to be reckoned with in any scheme of amelioration under our remit. The number of insured persons is not at present ascertainable. In their case it is the duty of the County Insurance Committee to make arrangements for the administration of medical benefit in terms of the Act. In so doing account must be taken of the question of distance and of those geographical and climatic difficulties that have been referred to as prominent factors in the adequacy of the existing medical provision in the Highlands and Islands.

Inquiry was made from time to time as to whether the average crofter would be ready to pay contributions in respect of at least twenty-six weeks—that is, an annual average of 3½d. a week. The invariable answer was that in those districts contribution without compulsion is unreliable, and that even if legislative power to compel were forthcoming the system would still lack the main guarantee of success—namely, an employer responsible for the employed contribution. We are, therefore, convinced that the industrial conditions of the Highlands and Islands are such as to make the provision of the Insurance Act less operative than in other parts of Scotland, and we foresee considerable trouble in providing medical benefits for fully-insured persons far removed from a medical centre, more particularly when it is borne in mind that so large a portion of them are so situated. Special subvention even in their case would indeed appear to be necessary, and the provision of medical attendance for their dependants is also a matter requiring urgent consideration.

GENERAL MEDICAL PRACTICE.

In regard to the scope of general practice in the Highlands and Islands, the report attaches importance to the following statement by Dr. Mackenzie, of North Uist:

The remuneration should be adequate to attract capable men, who would elect to stay. At present, owing to the general poverty of the class that chiefly demands their services, this is not so, with the result that the positions are very frequently occupied by two classes: (*a*) Young men recently out of college, who make the appointment merely a stepping stone to something better, who remain only a year or two, not long enough to become sufficiently acquainted with the idiosyncrasies of the people, or the diseases that families inherit or are liable to. (*b*) Older men, who, after perhaps a chequered career, fall back on such places as a last resort and harbour of refuge; while to the capable man who, from inclination or perhaps the force of circumstances, elects to spend his life in these regions, the most hopeful outlook before him is to die in harness, in case he dies of starvation when old age and decrepitude render him unable to continue work.

Frequent Change of Doctor.

In consequence of these unfavourable conditions there is in some districts a constant change of doctors. Certain parishes have, indeed, attained unenviable notoriety in this respect. To give a few instances: In one parish there have been ten doctors and as many locumtenents in twenty-two years, and in two other parishes there have been in ten years seven and five doctors respectively and several locumtenents. Such frequent changes cannot but affect adversely the efficiency of the medical service in these localities.

Forms of Remuneration.

(*a*) *Fees and Subsidies.*—The question of remuneration from general medical practice has already been referred to in some detail in the discussion as to the doctor's income, and in the paragraph dealing with the economic circumstances of the people. It is unnecessary here to retell the facts. Suffice it to repeat the general conclusion, which is borne out by all parts of the evidence, that private practice, more particularly among the cottar and crofter population, is

far from being remunerative. In some of the poorer districts it is of little consequence as a supplement to the doctor's income. The general effect is very much as put by Dr. Bremner medical officer of health for Sutherland:

> The sum paid to the doctor by the parish is hardly sufficient to live on and pay his ordinary expenses, and in many cases he has few or no private patients from which to supplement his income. Consequently, the question of expense is always uppermost in his mind, and at whatever cost to himself he must reach his patient in the cheapest way possible and as seldom as he conscientiously can.

There are, indeed, a few exceptional cases where by reason of continued successful fishing, or liberality of proprietors and shooting tenants, or of a special industry peculiar to a locality (as for instance, quarrying, afforestation, electric works, etc.), the regularity of the people's income is such as to enable them to defray medical services on the very moderate scale of fees calculated on the basis of mileage, of time, and of the degree of professional attention required. It has, however, to be recognized that those who have to pay for distance and time are placed at a great disadvantage as compared with their fellows to whom such heavy additional outlay does not apply. To redress this marked and unavoidable disability should be one of the chief aims of the betterment of medical service in the Highlands and Islands.

Subsidies from Imperial Grants.—The extent to which ordinary medical practice is subsidized by the pauper lunacy grant, the grant in respect of medical officers of health and of school medical treatment, is, as already indicated, of little moment. As regards the grant in aid of medical relief, which, though never adequate, has been the mainstay of local resources in the provision of medical attendance for the inhabitants, it is shown to have fallen to less than half the rate in the pound which ten years ago encouraged parish councils to offer salaries sufficiently high to attract medical men to these remote parts. The steady reduction in this grant has two obvious effects, especially in the poorer districts: it has entailed corresponding increase of the parish rates and has tended to discourage increase of the medical officer's salary.

General Recommendations.

The Committee conclude their report by making certain recommendations, which are detailed in last week's JOURNAL, pp. 98–99, the most important recommendation being the establishment of a central authority for the control and administration of medical services.

After considering the evidence and statements submitted by the medical witnesses, the Committee expresses the opinion in a general way that for public and private medical service (in single practice areas) a minimum income of £300 per annum, with travelling allowance, should be secured to every medical practitioner recognized by the central authority.

In the case of doctors living in a common centre (multiple practice area) where it would be in the public interest to arrange that outlying patients be attended at small fees, the doctors should receive an annual subsidy to enable this to be done.

As suggested by Sir Donald MacAlister, on the analogy of India, a tariff of fees suited to local circumstances should be prepared by the doctor for inclusion in any scheme submitted by the local authority for approval of the central authority.

The relations of the Medical Service Committee to all the other authorities and interests would be adjusted by regulations issued by the central authority, who would be authorized to make grants conditional on the establishment and maintenance of a satisfactory medical service—the conditions to include any special qualifications necessary for medical officers, nurses, and others; questions of tenure of office, submission of tariff charges for private practice and the like. The central authority would act in concert and consultation with the central departments represented on it.

These are the recommendations of the Committee as to what might be the best way to administer the proposed grant; but the Committee recognize the possible objections to the creation of a new central authority, and that the Government may consider it more expedient to administer a grant through the existing central and local authorities acting in concert.

SCHEME FOR CONSOLIDATION OF MEDICAL SERVICES.

Appended to the report is a suggested scheme for the administrative consolidation of medical services, by Dr. Leslie Mackenzie, medical member of the Local Government Board (Scotland), a notice of which we hope to be able to give at an early date.

SCIENCE NOTES.

SOME experiments carried out recently in the Runcorn Research Laboratories of the Liverpool School of Tropical Medicine on the resistance of the bed-bug to various powders, liquids, and gases designed for its destruction are reported in the last number of the *Annals of Tropical Medicine and Parasitology* by Dr. B. Blacklock. In houses it infests the bug dwells in some place where it is protected from attack. It prefers a refuge close to its human source of food supply, and therefore prefers to live in the crevices of a wooden bedstead, or behind the wall paper close at hand, but as it is a rapid walker its refuge may be in a remote corner of the room. It feeds rapidly, running from place to place, stopping for a few seconds to puncture the skin with its stylets, suck up some blood, and pass on. In a few minures it is swollen and shiny; it appears that it does not as a rule defaecate at once on or near its host, so that there may be no marks on the bedclothes, even though bugs be plentiful in the room. Eggs may be laid within twelve hours after feeding; they hatch out in seventeen days at ordinary summer temperature, and the young can begin to feed within an hour or two. The vitality of the eggs was found to be destroyed by immersion in cold water for twenty-four hours, and the young are destroyed by moisture, their legs and antennae becoming glued together. The insect powders in common use appear to act mechanically. The powder must be fine, dry, and light, and must come thoroughly into contact with the bug; the fine particles then adhere to the body, antennae, and legs, the insect turns on its back and so struggles until it dies, after a period varying from a few minutes to several days. The eggs do not seem to be injured by the powders, but if the young hatch out in contact with powder, they often become entangled and may die. Bugs do not drown easily, though immersion for twenty-four hours is too much for them; they are killed by boiling water poured on to them, but can withstand water at ordinary scrubbing temperatures. Of the other liquids tried, carbolic acid (5 per cent. and 10 per cent.), mercury perchloride (1 in 1,000), and paraffin oil, the last was the most efficient, but they can walk over a board smeared with paraffin and survive. There is no evidence, therefore, that insecticide powders or liquids can be depended on to clear bugs out of a house under domestic conditions. Gaseous substances present the best prospect of success, and of such substances sulphur dioxide is both effective and cheap. It kills both the insect and its egg and acts more rapidly at a slight pressure. Unfortunately bugs are not easily killed by deprivation of human blood. A bug kept in a glass tube by Geer without any food at all lived for a year "quite comfortably." Blacklock kept some in a glass tube for three months, and at the end of that time they were still alive and active. In another experiment he put thirty newly-hatched bugs in a tube; some of them died from time to time and their bodies disappeared, but at the end of three months nearly half (fourteen) were alive and active. He states, as a matter of common report, that in the case of old barges infected with bugs very prolonged complete immersion of the woodwork does not destroy the insects, probably because they are so securely hidden that the water never actually comes in contact with them. Considering the tenacity of life they display, it would appear that the means used for their extermination in a house—even sulphur dioxide gas—should be repeated after an interval of a few weeks. The expense of the inquiry was defrayed by Sir E. Durning-Lawrence, as was also that of another made by Dr. Blacklock and reported in the same issue of the *Annals*, into the resistance of the tick, *Ornithodoros moubata*, to various sheep dips. The general conclusion was that, used in the strength recommended and for the time suggested, the dips examined had very slight effect on this particular tick, which is extensively distributed throughout tropical Africa and attacks both man and beast.

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THE CULTIVATION OF THE MALARIA PARASITE.

The current number of the *Annals of Tropical Medicine and Parasitology*[1] contains a paper by Thomson and McLellan confirming the observations of Bass of the Tropical Medicine School of the Tulane University, New Orleans, to which reference has already been made, as to the cultivation *in vitro* of the malarial parasite. This seems to mark the beginning of another, and it would almost seem the final, stage in the elucidation of the life-history of the parasite and its relation to the disease. Sir Ronald Ross, in a note to the paper in the *Annals*, says that he is quite convinced that the specimens sent to him by Bass, and those made by Thomson and McLellan at Liverpool, give indisputable evidence of the successful cultivation of *Plasmodium falciparum* (the malignant tertian parasite) up to the sporulating forms. "These forms," he says, "are much too numerous in the specimens to admit of the supposition that the parasites have not developed since the blood was taken from the patient. The advance thus made is one of great importance, as all efforts to cultivate the parasites of malaria have hitherto failed since their discovery by Laveran in 1880." Bass states that he has been successful also in cultivating *Plasmodium vivax* (the benign tertian parasite) and *Plasmodium malariae* (the quartan parasite). That the conditions to be fulfilled in any successful repetition of the experiments demand minute attention to detail is shown not only by the failure of all previous attempts made by many investigators, but also by the fact that experiments made early last year by J. A. Sinton at Liverpool to repeat Bass's observation gave negative results, apparently because Bass in his earlier publications had omitted to state that the addition of a solution of dextrose to the cultivation was an important factor.

Thomson and McLellan have succeeded in two cases. The procedure was as follows: The arm of the patient was first scrubbed thoroughly with an alcoholic solution of mercury biniodide; the antiseptic was washed off and the epidermal scales fixed by a 70 per cent. solution of alcohol, which was allowed to evaporate before the puncture was made. It is not advisable to wash the arm with any watery solution, as two points have always to be safe-guarded—namely, that no micro-organisms (usually the *Staphylococcus albus*) be either carried into the vein or deposited in the culture tube, and, secondly, that no antiseptic shall be carried into the culture tube. The median basilic vein was punctured at the bend of the elbow and 8 c.cm. of blood allowed to flow into the syringe, slowly forcing up the piston by its own pressure. It was then transferred as quickly as possible, in order to prevent clotting, into a sterile culture tube containing 0.1 c.cm. of sterile solution (50 per cent.) of Merck's dextrose. Through the woollen plug with which the tube was closed passed a thin glass rod, which was used to stir up the blood in order to defibrinate it and mix it with the dextrose. Throughout these procedures it was necessary to be careful to avoid air bubbles. The mixed defibrinated blood was then introduced into two culture tubes, the column of blood in each being 1 in. or 2 in. thick. The tubes were incubated at 38° C., when the red blood cells gradually settled, and three layers were formed. A top layer of ½ in. to 1 in. of clear serum, a thin intermediate layer of loose red corpuscles and white cells—the culture layer—and a bottom layer, consisting mainly of red cells, in which the parasites died in periods varying from two to twenty hours. A few of the surface cells were drawn off with a capillary pipette after twelve, twenty-five, twenty-seven, and thirty-two hours. Small drops were placed on clean glass slides, smears were made, fixed in methyl alcohol for twenty minutes, and stained in the usual way with Giemsa or modified Romanowsky solution. It was found that the smears should be somewhat thick, owing to the amount of serum mixed with the cells.

In preparations so made a most remarkable appearance was noted after twenty-five hours' incubation at 38° C., definite segmenting forms being seen in large numbers showing the nucleus broken up into fragments. The paper is illustrated by a microphotograph showing a portion of a slide on which hundreds of these schizonts were seen clumped together. The pigment mass was quite distinct and where segmentation was nearly complete the merozoites were arranged concentrically round it, thus forming the so-called rosette. No evidence of these merozoites having entered new corpuscles and so beginning another generation of parasites was obtained. In a second case examined the results were not so conspicuous, possibly, as Thomson and McLellan suggest, because the patient had been in the habit of taking quinine with great regularity.

They are unable to explain why the parasite should grow in the culture tubes only in the thin layer between the serum above and the main mass of the red blood cells below. The serum was probably filled with antibodies produced by repeated sporulation of parasites, yet it was apparently powerless to stop parasitic growth so long as that growth remained intracorpuscular. After incubation for twenty-seven hours few segmenting forms were found, the probability being that the corpuscles had burst, causing the merozoites to be dispersed, thus subjecting them to the destructive action of the serum and leucocytes. This subject remains for future investigation, as also the question whether the parasites grow better or worse in normal human serum.

AN ENGLISH PHYSICIAN OF THE FOURTEENTH CENTURY.

Chaucer's picture of the Doctour of Phisyk is a *locus classicus* of our literature. Among the many authors whom he had read is "Gatesden," John of Gaddesden, author of the treatise known as *Rosa Anglica*. This treatise is familiar by name to all interested in the history of medicine, though it may not be very rash to conjecture that it has been more spoken of than read. John of Gaddesden was a man of great note in his day. He had a large practice and numbered royal personages among his patients. Little is certainly known about him, though he is frequently quoted and referred to by later writers. Every stray fragment of information has been

gathered up by Dr. H. P. Cholmeley, and out of the materials thus collected he has made a most interesting book.[1] In it John of Gaddesden is made the central figure in a picture of fourteenth century physic in this country. Around him are grouped details of the medical lore and practice of that day, gathered from contemporary sources and skilfully focussed so as to throw every available particle of light on the subject of the work.

John of Gaddesden was probably born about 1280, and died in 1361. His active life therefore covers the first half of the fourteenth century. He was educated at Oxford, and is mentioned by Anthony à Wood as being a "Doctor in Medicinis" at Merton College in 1320. To become a doctor he must previously have graduated in Arts; this implies an intellectual discipline of considerable severity, however barren many of the problems on which the student's mind was exercised may seem to us. Then the candidate for a medical degree had to spend four years of special study, at the end of which he had to pass an examination. There is no evidence of clinical training being required, and a fourteenth century English physician was let loose on the world unprovided with any other knowledge than such as could be got from books. There was, in fact, properly speaking no school of medicine at all in this country till the early part of the eighteenth century, when those of Dublin, and a little later Edinburgh, came into existence. Hence men had to go to foreign schools, chiefly Italian, to learn the practical part of the art. Although partly conjectural, we may take it that the chronology of Gaddesden's life as given by Dr. Cholmeley is fairly correct. According to this he entered Oxford for grammar at the age of 14 in 1294, and incepted as M.A. He began to study medicine in 1303, and graduated B.M. in 1307, and D.M. in 1309. He wrote the *Rosa Anglica*, or as he called it *Rosa Medicinae*, in 1314. The preface, written in the pedantic and somewhat grotesquely ornate style characteristic of the period, states that the author's aim was to write a book for the humble to read. The title of the book, he says, has reference to the five appendages which belong to the rose, as it were five fingers holding it, concerning which it is written "Three are bearded, and two are not." That is to say, three of the parts surrounding the rose are hairy, and two are smooth, and the same is the case with the five parts of his book. "The first three are bearded with a long beard, for they treat of many things and about general diseases, and for a discussion of what constitutes a general or common disease, look in the introduction to the second book. The two following books treat of particular diseases together with some matters omitted in the preceding books and they are as without a beard (shorter)." He winds up with the modest remark: "And as the rose overtops all flowers, so this book overtops all treatises on the practice of medicine, and it is written for both poor and rich surgeons and physicians, so that there shall be no need for them to be always running to consult other books, for here they will find plenty about all curable disease, both from the special and the general point of view." The work is largely a compilation from the Greek, Arabian and Jewish physicians, together with the works of his immediate predecessors, such as Gilbertus Anglicus and Bernard of Gordon, but there are not a few records of his own experience. Guy de Chauliac, however, refers to the book as "a foolish rose of England" in which, instead of the odour of sweetness he expected to perceive, he found only the fables of Hispanus, Gilbert, and Theodoric. Freind's judgement is more favourable. He says that Gaddesden "seems to have made a collection of all the receipts he had ever met with or heard of; and I believe this book can afford us the best history of what medicines were in use, not only among the physicians of that time, but among the common people of England, both in the empirical and the special point of view." Gaddesden never fails to make the most of his successes, which gives Dr. Cholmeley the opportunity of saying that he would have agreed with Matthews Duncan, who used to say to his class, "If you don't believe in yourself nobody else will." The *Rosa Anglica* is best known by the famous passage referring to the use of what may be called a red atmosphere in the treatment of small-pox. By wrapping the patient—"son of the most noble King of England"—completely in red cloth, and having everything about the bed of the same colour, he cured him without pitting. Gilbert Anglicus before him had mentioned that the old women of his day believed that red substances had "an occult property of curing small-pox," and centuries later we find a bill for red cloth supplied when Charles V, as a young man, was ill with small-pox. We need only remind our readers that the treatment of small-pox by red light was advocated by the late Dr. Niels Finsen in this journal only a few years ago.[2]

Travel in the fourteenth century was an extremely serious business. Besides the perils from shipwreck and robbers, there were the innumerable dangers of infection at insanitary inns. The author of the *Rosa Anglica* advised that those about to go on a journey should, by way of preparation, be bled or purged, so that the body might be cleanly. If the air was foul the wayfarer was recommended to sniff camphor or roses or violets, and if there was a stink, to hold his nose. Sensible directions are given as to eating and drinking, clothing, the care of the feet and the perineum, and keeping the feet warm and dry.

A comparatively small portion of the book is devoted to surgery. Among the operations described are lithotomy, herniotomy, and the reduction of dislocations. John of Gaddesden does not disdain to give directions as to cosmetics for the cure of freckles, pustules, and sunburn. He gives prescriptions for complexion washes, and for sweetening the breath and the body generally. He urges the need of frequent baths and the importance of cleanly underclothing with an insistence that may surprise those who think of the Middle Ages as a time when the gospel of dirt was universally practised. He explains that he writes these things for delicate women and for noble men. There is a section on the care of the health based on the regimen of Salerno. Our modern believers in fruit as the preventives of all disease will doubtless be shocked by his views. After speaking of ill-regulated lives, too much eating, and so on, John of Gaddesden says: "Again with fruits; some eat more of them than of other food, wherein they do not well, for all fruits make watery useless blood and prone to putrefaction." He allows pears, figs, and apples after dinner to those inclined to looseness of the belly; prunes, cherries, raisins, and figs should be taken before dinner. On the whole, however, he says it is best to do without fruit altogether, and he quotes Galen as stating that his father lived for one hundred years because he never ate fruit.

[1] *John of Gaddesden and the Rosa Medicinae.* By H. P. Cholmeley, M.A., D.M. Oxford: At the Clarendon Press. 1912. (Med. 8vo, pp. 181, 8s. 6d. net.)

[2] Remarks on the Red Light Treatment of Small-pox, BRITISH MEDICAL JOURNAL, June 6th, 1903, p. 1297.

After the dissertation on health in general comes a discourse on colic, a complaint which seems to have been common in the Middle Ages. Probably we think it appears common because it was more spoken of, just as one might imagine that, from the frequency of allusion to the complaint in popular French speech and literature, it was more common than it is among ourselves, the fact being that the difference is probably due to the curious reticence about such matters caused by the *pudibonderie Anglaise*. But that our mediaeval ancestors suffered very much like Father Tom *in partibus interioribus* from their appalling diet, there is no doubt. They ate enormous quantities of meat, much of it salted. They also consumed salt fish very largely, and their dishes were seasoned with ambergris and a number of substances that must have made them acutely trying to the most vigorous digestion. An amusing account of mediaeval diet was given in *L'Hygiène* not long ago by a French writer who tried some of the "horrifiques recettes" of his ancestors on himself. They were also great eaters of sweets and fruits. This possibly may have inspired John with the bad opinion of fruit that he expresses. The *Rosa*, according to Dr. Cholmeley, may be taken as giving a fair picture of an English physician of the fourteenth century. He was a man of good general education, familiar with the writings of his predecessors. Of anatomy and physiology he knew nothing, but within limits he seems to have been a fairly accurate clinical observer.

On certain points we think Dr. Cholmeley is not altogether fair to John of Gaddesden. He says: "The book bears out the somewhat unfavourable estimate of the character of the leech which is expressed by Chaucer, by Langland through the mouth of Piers Plowman, and by John of Salisbury, for Gaddesden appears to have been fond of his fees, and by no means to have neglected the by-ways of medicine such as diet, cookery, and the care of the complexion or beautifying of the body." He would have been foolish if he had; and as for fees, are we to believe that lawyers were not eager for money, and that ecclesiastics did not look for benefices? Did Chaucer himself forego the emoluments of the various offices he held under the Crown? Samuel Taylor Coleridge said that a certain indifference about money was a characteristic of a gentleman. Whereon Carlyle made the sensible comment that to warrant such indifference a man must have no need of money. John of Gaddesden was rather inclined to magnify his office, but that is a state of mind not altogether unknown at the present day. He seems to have held that medicine was a mystery, the secrets of which should not be revealed to the profane. Yet his book is clearly to some degree intended for the enlightenment of the laity on matters of health; if they were at the same time enlightened as to the author's skill as a practitioner, that, from his point of view, was all to the good.

Dr. Cholmeley has evidently made the study of John of Gaddesden a labour of love, for he has collected everything that bears on the subject from mediaeval literature. His book is, in fact, a storehouse of learning on the subject. He has taken infinite pains to trace and examine the writers whom John might have read, and to give an idea of the contents of their works. His *apparatus criticus* includes, among other things, the text of the regulations of the Emperor Frederick II of Sicily as to unqualified and regular practice in the kingdom of Sicily in the thirteenth century; the text of the decree of Pope Boniface the Eighth concerning the mutilation of bodies, which has so often been misinterpreted as meaning the prohibition of dissection; and a version of the *Isagoge*, or introduction to medicine, of Joannitius (or to give him his Arab name, Hunin), which explains the technical terms used by mediaeval writers. Dr. Cholmeley's work is a well ordered storehouse of learning and a solid contribution to the history of medicine.

THE GLUT OF OPIUM IN CHINA.

IN an article which appeared in the JOURNAL on September 14th, 1912, it was pointed out that a crisis was to be expected, in the near future, in the opium traffic between India and China. We indicated that, paradoxical as it might appear, the opium merchants, the anti-opiumists, and the Chinese reformers were at one in desiring a cessation of poppy cultivation in India for purposes of the Indo-Chinese opium trade. Unfortunately, the Indian Government, which has pocketed large surpluses in past years from opium sales to merchants trading with China, was not disposed to reduce the present area of 200,000 acres under poppy cultivation in India. The result is a present glut of opium in the warehouses of the treaty ports in China, to the estimated value of £11,000,000. There is a growing disproportion between demand in China and the supply from India. The latter has been almost forced upon the merchants by the sales at auction conducted by the Government of India with an eye to revenue. The demand in China has been reduced by the fact that during the unsettlement consequent on the revolution the home production of the drug was illegitimately augmented, while more recently a recrudescence of energy on the part of the Republic has cancelled licences to smoke opium and conducted a vigorous anti-opium campaign.

It is true that by agreements made with the Imperial Government of China in 1907 and 1911 the Indo-Chinese trade was to terminate in 1916, but it was also rather illogically arranged that until that date Indian opium should be permitted to enter those provinces of China which themselves continued to produce the drug. While it appears to be the sincere desire of the wisest heads among the Chinese authorities to bring to an early and complete termination a trade which they are convinced is demoralizing and degrading their people, there is also little doubt that there are keen business men who desire that so long as opium fetches highly remunerative prices the large profits should go into the pockets of the Chinese growers rather than into those of the British merchants, with rather un-British names, who are anxious to unload upon the citizens of the Republic the product of the Indian Government's poppy fields.

In a debate which took place in the House of Commons just before Christmas it was pointed out, on behalf of the Government, that we were under no obligation to secure a profitable market in China for Indian opium merchants. The question to be answered, it was said, was whether the planting of the poppy was going on in China under the sanction of the Republican Government; if this was the case and the import of Indian opium was being obstructed, the agreement of 1911 was being infringed and the consequences might be serious. If, on the other hand, as recent reports appeared to show, the new Government of China was making real endeavours to restrict the growth, consumption, and trade in this perilous drug, no question of cancellation of our agreement could arise.

This policy, as stated by Mr. Acland for the Government of India, is, we believe, in accord with

public opinion—at any rate, in this country—though it may create an unpleasant position for the Indian merchants, and not be altogether free from embarrassment to the Government of India. We agree with the *Times*, which, in a recent article on the subject, indicated that a war to insist upon the fulfilment of these opium agreements with China would be "regarded as indefensible."

We read of the burning of seven chests of Malwa opium at Anking, and the dispatch of H.M.S. *Flora* thither with a British consul-general on board. If, as is alleged, this opium was in the hands of a Chinese purchaser when destroyed, it is not clear that any case for British intervention has arisen, since a recent dispatch from Delhi states that the Indian Government, after next April, will suspend opium sales for China, and reduce the amount to be sold for consumption outside China by 4,200 chests. This, it is hoped, will unload some of the accumulations in the treaty ports of the opium, which has become in very truth a "drug in the market."

Meanwhile the date fixed by the Hague Convention for a fresh step in the way of practical performance of the International Opium Convention of 1912—namely, December 31st—has passed. We understand that some Powers have not yet signed the convention, and, according to the protocol, it will be forthwith the duty of the signatory Powers to meet at the Hague and consider how practical force can be given to the International Convention without waiting any longer for the laggards.

We are aware, of course, that the Anglo-Chinese treaties were ruled out of consideration at the Hague Conference, but we look to the coming into force of this International Convention as the means for bringing enlightened public opinion to bear upon the extinction of the opium vice as well as the abuse of morphine and cocaine all the world over.

MEDICAL INSPECTION OF SCHOOLS.

ELSEWHERE in this issue will be found the conclusion of our summary of the latest report of the Chief Medical Officer to the Board of Education. Like its predecessors, this fourth report is full of details of an interesting character; but, also like its predecessors, it sometimes, indeed often, fails to supply any summing up giving precise information as to the position of matters and as to the line of action the Board would commend to education authorities. It is clear, however, that a considerable number of school medical officers throughout the country are giving attention to the consideration of matters of principle, despite the preoccupations of a large proportion of them by the ordinary duties of a medical officer of health. On one point Sir George Newman's views are very plainly set forth—that is, the right performance of the duty of medical inspection. He points out that the main purpose of medical inspection is preventive, and that to be effective it must be sufficiently thorough and clinical. Its value for each individual child depends upon the degree to which the medical officer brings to bear his medical skill, knowledge, and experience combined with powers of observation and judgement. He must thoroughly appreciate disease as a crippling agent, even when present only in minor degrees. The whole life and condition and circumstances of the child in relation to disease must come within his purview. The sum total of physical data taken in relation to the child's environment must be thought of, not as an abstract proposition, but as it concerns the present welfare and the future development of the child. Some of the factors on which his success will depend are his medical knowledge, his accuracy, caution, thoroughness, and the avoidance of besetting fallacies in his examinations, and in his deductions and interpretations. The work calls for imagination as well as for clinical ability, exact observation, and experience. The sequelae of even minor morbid conditions must be understood. All this is admirable, but obviously its attainment demands a high degree of clinical acumen and intimate knowledge of the family to which each child belongs. The work requires, in short, a combination of qualities which can hardly be expected except in family practitioners of lengthy experience. It is probably in view of this circumstance that not only in the United States but also in Germany, which rightly or wrongly has for some years past been regarded as the true leader of thought in regard to the State application of medical knowledge, the school medical service has been staffed almost exclusively by part-time medical officers, that is to say, by general practitioners who are prepared to devote a portion of their energies to school work. Sir George Newman records this fact in his notes on the two countries, but does not point out how different is the policy it represents from that which the Board of Education in this country appears to have adopted. The medical inspection of school children in this country is mainly in hands other than those of family practitioners. In 243 areas out of 302 the school medical officer is the medical officer of health. Many of them, no doubt, possess considerable clinical experience, but this can hardly be the case in regard to their 212 whole-time assistants. These, for the most part, must be young men who have specialized early in the direction of public health work, and no amount of organization will enable them to obtain that intimate knowledge of the home circumstances of a child which comes to a family practitioner in the course of his ordinary work, and which often enables him to give sound advice to its parents as to its educational career. Yet this is what Sir George Newman deems to be necessary if the real objects of medical inspection are to be attained. There are many other points in the report which afford room for thought, notably Sir George Newman's suggestions as to the establishment of sanatorium schools, and sundry passages which indicate a desire to bring children under a continuous official control, which will begin on the day of their birth and only end on the day when they come under that of the managers of the great labour organizations of the country.

STATE INSURANCE SICK CLUBS IN GERMANY.

DURING the period of five years from 1907 to 1911 the total number of sick clubs under the State Insurance in Germany (Krankenkassen) fell from 23,232 to 23,109, but the number of members rose from 12,138,966 to 13,619,048. In 1911, 5,772,382 cases of illness with inability to work were dealt with, as against 4,956,383 in 1907. In respect of these, sick "benefit" and treatment in some form of institution was paid for 115,328,905 days in 1911, as against 97,148,780 in 1907. The ordinary income of the clubs rose from Mk. 319,592,187 in 1907 to Mk. 412,290,611 in 1911, and the expenditure from Mk. 300,379,186 in 1907 to Mk. 388,442,459 in 1911. The excess of assets over liabilities for 1911 was about Mk. 312,000,000. The average cost per member in 1911 worked out at Mk. 24.83. The amount of money paid to the doctors for attendance on sick insured persons was Mk. 63,325,782 in 1907 and Mk. 83,754,224 in 1911; the cost of drugs, etc., rose from Mk. 40,157,749 in 1907 to Mk. 53,171,234 in 1911. In 1911 the doctors' bill came to Mk. 6.15 per member and the drug bill to Mk. 3.90. It will thus be seen that the average number of days during which members were in receipt of benefits was eight and a half, while of the 24s. which each member cost the clubs about 10s. went for

the doctor and medicines. A further significant fact may be deduced from the current figures—namely, that while the clubs, taken as a whole, received about £20,600,000 from the members as contributions and spent £19,400,000 in sick pay, etc., the actual excess of assets over liabilities amounted to the huge sum of £15,600,000. Unfortunately we cannot state the number of days' illness for which ordinary medical attendance was given, and therefore we cannot gauge the average remuneration received by the doctors in comparison with the work done.

VOLVULUS, DIET, AND RACE.

Two interesting articles, making together a monograph on pathological torsion of the large intestine, appeared at the end of last year in a French contemporary.[1] M. Duroux, the author, finds that volvulus of the large intestine is very rare in France and western and southern Europe, whilst it forms an appreciable proportion of all cases of intestinal occlusion registered by surgeons and pathologists in Scandinavia, Finland, Russia, and Poland. Duroux quotes half a dozen authorities who work in these northern and eastern lands, and finds that they have sufficient material at their disposal to determine with some accuracy averages of the relative frequency of volvulus in different portions of the large intestine. Whilst in France only 18 authentic cases of volvulus of the caecum have been reported, Leichtenstern, Philipowicz, and others have made out that this, the rarest form of volvulus, is much more frequent in Slavonic and Scandinavian countries. Taking statistics in which volvulus of the small intestine is included, these writers estimate that the caecum is the seat of volvulus in no less than 10 per cent., the ileum in 34 per cent., and the sigmoid colon in 50 per cent., isolated volvulus of the transverse colon making up the remainder. The relative frequency of volvulus of the caecum as compared with the same lesion in the small intestine, in the north and east of Europe, will surprise surgeons and pathologists in the United Kingdom. It would be interesting to draw up an "all-British" table of volvulus. The French *cuisine* and the dietary of the other Latin nations is more delicate than ours. Plenty of poor folk in this country eat very little meat, and the potato-eating Irish peasant must be taken into account, though the diet in the south and west of the sister isle is not so unvaried as it was before the famine. The modern Norseman and Slav are vegetarians on the whole. According to Tarentsky, Dreike, and Rolssen there are no differences in the morphology of the intestine in different races. But Hyrtl found that when one cat was kept for a year on a vegetarian diet and a second cat on animal food for the same space of time, the intestine of the former became 3 in. longer than that of the flesh-fed animal. It is doubtful, however, if elongation of the bowel becomes marked in vegetarian races. Duroux admits that there is no evidence that such is the case. On the other hand, he points out that badly-cooked vegetable food of inferior quality undoubtedly causes dilatation of the bowel and, what is directly to the point, that well-known clinical symptom, atony of the colon, so closely associated with volvulus. This atony is increased by the dyspepsia and other ailments due to the hardships of life and the rigours of climate prevailing in northern Europe. No doubt where one case of torsion occurs there must be hundreds of persons suffering from loaded colon, which implies evil effects far more frequent.

PSYCHOLOGICAL AND PHYSIOLOGICAL STUDIES ON APES.

THE idea of prosecuting a scientific study of the psychology of the anthropoid apes is not new, but hitherto this study has been limited to artificial surroundings. The observations of military officers and of other persons not trained in psychological technique cannot, in Professor M. Rothmann's opinion,[1] be relied upon, and too much importance should not be attached to the mentality of apes kept in captivity in the various zoological gardens, or to those trained animals which perform at circuses. On the other hand, some exceedingly important work has been conducted on the physiological processes of apes by well-known neuro-physiologists. Professor Rothmann briefly sketches some of the available information in regard to the psychology of gibbons, chimpanzees, orang-outangs, and gorillas, and after reviewing the physiological investigations claims that there is urgent need for the institution of an "observation station" for anthropoid apes. The suggestion that such a station should be organized in Germany has been abandoned on account of technical and financial difficulties. A suggestion to establish the station in the Cameroons was found to be fraught with many difficulties owing to the long journey and to the climate. It was therefore decided to find an intermediate home for the apes, and Teneriffe has been chosen. The Governor of the Cameroons and the German Colonial Office have lent assistance to the scheme by providing animals, and the Woermann Line has generously consented to carry them free of charge; the initial expenses have been met by the Selenka Trust and the Plant Trust. The management has been placed in the hands of a committee, of which Professor Waldeyer is president. Two chimpanzees have already arrived and are reported to be doing well. If the climate proves suitable to the animals it is proposed to send out a young investigator next year to study in a methodical manner the sounds uttered by the apes, their gesticulations, their comprehension of spoken language, their comprehension of numbers, the power of differentiation of colour, the development of the hands, and other matters of primary importance. Later, it is suggested that psychological studies should be extended to orang-outangs.

MEDICINE IN THE ENCYCLOPAEDIA OF RELIGION AND ETHICS.[2]

REFERENCE has on a previous occasion (vide this JOURNAL for February 24th, 1912, p. 452) been made to the medical interest which is excited by the perusal of this remarkable *Encyclopaedia;* and, although there are not in this volume (the fifth) articles which are so distinctly medical as several which appeared in the earlier ones, yet there are many which deal with subjects closely related to the practice of the physician and surgeon. The only purely medical article is that on *Drunkenness*, written by Dr. J. F. Sutherland. There are some very interesting paragraphs in this contribution regarding the degeneracy of the offspring of drunkards, a degeneracy "about which until quite recently there has never existed a doubt." Dr. Sutherland deals very carefully with the question, but he sums up quite decidedly: "As far as the controversy has gone, there can be no doubt that the authorities who believe that alcoholism, not gross alcoholism—about that no doubt exists—but that fairly general kind of free indulgence which takes place daily, with frequent 'week-end' bouts, does lead to the physical and mental impairment of the offspring, are in the right, and can produce unquestioned evidence in support of their view." It may be mentioned, in this connexion, that the subject of *Eugenics*, which should in alphabetical order have been taken in this volume, has been postponed, and will be considered along with *Marriage;* we shall then see whether Professor Pearson and his co-workers have succeeded in weakening the generally accepted opinion on the degeneracy of the drunkard's child. An article in

[1] Les torsions pathologiques du gros intestin et leur traitement chirurgical. I. Volvulus du caecum. *Rev. de gynèc. et de chir. abd.*, October, 1912. II. Torsions du colon transverse et de l'S-iliaque. Ibid., November, 1912.

[1] *Berl. klin. Woch.*, October 14th, 1912.

[2] *Encyclopaedia of Religion and Ethics.* Edited by James Hastings, M.A., D.D., Fellow of the Royal Anthropological Institute. Vol. v. Dravidians—Fichte. Edinburgh: T. and T. Clark.

which there is a marked medical substratum is that on *Dwarfs and Pygmies*, and in it there is evidence of the marked shifting of anthropological opinion during recent years regarding these curious peoples; for according to Kollmann and Schmidt (and they have many followers) the pygmies are "the oldest of peoples on the earth—the child-race of mankind," and it is possible that the belief Leland reached by an intuitive process years ago—namely, that "mankind was originally a dwarf"—may soon be accepted as the verdict of anthropology and ethnology. In this connexion it is to be noted that this volume also contains an article on *Ethnology* from the pen of Dr. A. H. Keane; it is a most condensed but at the same time valuable contribution, and by its bibliographies throws open the way to further research on the part of the interested reader. In the various articles which fill the nine hundred pages of this instalment of the *Encyclopædia* there are constant references to the medical side of things, and we may name, in particular, the papers on *Dreams and Sleep*, on *Dress*, on the *Emotions*, on *Enthusiasm* and the *Enthusiasts*, on *Ecstasy*, on *Environment*, on *Euthanasia*, on *Evolution*, on *Fasting*, on *Fear*, on *Feeling*, and on *Fetishism*. Further, the chief contribution, that on *Ethics*, occupying over one hundred pages and written by some twenty authors, has many allusions to and bearings upon matters which cannot fail to interest every doctor, be he general practitioner, alienist, or specialist. The subject of *Eunuchs* is treated by Dr. L. H. Gray, who also writes on *Duelling*, *Eskimos*, *Expiation*, and *Fate;* castration, its mental and physical effects, its birthplace, its ethical bearings, and the strange question of the status of the eunuch-priest are all fully discussed. The *Evil Eye*, as a strange widespread belief, has a most interesting story, and it is well told in these pages; the phallic and other protections against its baleful influence lead the inquirer into a most curious region of medical folk-lore. The theory that the baby's coral and bells is a modern form of the ancient amulets against the evil eye is accepted. Two other articles call for notice. The one is on what is called the *Female Principle*, and deals with the relation between femininity and religion, with sexless deities, and other curious phenomena of a psychological kind in this department; the other is devoted to a careful presentation of *Faith-healing*, containing quotations from Sir Henry Morris's article in this JOURNAL in 1910. The author (W. F. Cobb, D.D.), under the term "faith-healing" includes mental healing, magnetic healing, spiritualistic healing, and spiritual healing; in all of them, he says, "suggestion plays a leading part," and he adds, "the most widely spread subspecies of mental healing is that known as Christian Science, and the strongest form of suggestion is that called hypnotism." Dr. Hastings is to be congratulated on having completed the first half of his gigantic task in the editing of this unique encyclopaedia, always supposing, however, that his original estimate of ten volumes is not to be overpassed.

SEX OF INFANTS AND AGE OF MOTHERS.

WE must take nothing for granted, especially statistics, and above all statistics which appear to prove questions about fertility, decadence, and determination of sex. Such is the moral of a recent communication[1] by Professor Ahlfeld, well known for his works on teratology and obstetrics. There is a notion prevalent that to elderly primiparae male children are born in an unusually large proportion. Ahlfeld himself made out some time ago that whereas 100 females to 106 males was the general proportion, in the case of elderly primiparae the males amounted to 137. He warned his pupils at the time that some accidental factor might lie hidden in the series on which these statistics were based, but other long series of births analysed after Ahlfeld's tended to confirm his evidence. Then Eckhardt set to work and brought out a somewhat different result. The proportion of males was high in primiparae from 30 to 34, and higher between 30 and 39; but in women who conceived for the first time after 40 excess of females over male children appeared to be the rule. More recently, in scrutinizing a series of 8,000 births at Marburg, Ahlfeld himself obtained actually opposite results. Out of 280 primiparous mothers aged from 30 to 49, 151 gave birth to girls and only 129 to male children, or 85.4 males to 100 females. This reversed Schramm and Ahlfeld's proportion of 132.8 males to 100 females collected at Leipzig. Ahlfeld still doubts whether all the statistics above noted, lumped together, would be sufficient to warrant a confident conclusion. Believing that not thousands, but millions, carefully collected and scrutinized, would be necessary, Ahlfeld has combined these already known statistics and publishes them in tables which obstetricians and publicists may study with interest and possibly with advantage. It seems pretty well established that young primiparae give birth to more males than females. Bidder made out 133 males to 100 girls in primiparous mothers from 14 to 18 years of age, but in primiparae between 18 and 30—that it is to say, women in the prime of sexual life—the proportion was 109.3 males to 100 females, the lowest proportion of all. On the other hand, in primiparae over 40, the proportion was 130.3 males to 100 females, the excess of boys being less than in child-mothers. Bidder held that the female, as members of that sex are very prone to believe in the present day, is the higher sex, physically at least, and that consequently women in their prime bear more female children proportionately than do young girls or women approaching the menopause. Thus the weaker women bear the most male children. The one fact the statistics seem to show is that, as a total, more males are born than females. One point quite unsolved, Ahlfeld reminds us, remains to be settled: Is the sex already determined in the ovum before impregnation? Experiments on tadpoles have led to the belief that the sex may be influenced by the temperature of the water in which they are reared. Ahlfeld says nothing of these experiments, but remarks that scientists have distinguished male from female ova in *Dinophilus apatris* and *Phylloxera vastatrix*. He urges registrars, midwives, and others to gather more information.

[1] Die Einfluss des Alters der Mutter auf das Geschlecht des Kindes. *Monats. f. Geb. u. Gyn.*, September, 1912, p. 271.

MEDICAL STUDENTS IN OLD PARIS.

G. J. DE BOYER DE CHOISY, in a thesis presented to the University of Paris some time ago, gave an account of the medical students of Paris in the sixteenth century, and showed that they came from the upper ranks of the bourgeoisie, and from the families of magistracy. For admission to the Faculty the degree of Master of Arts was necessary. In the colleges the students, like the professors, were obliged to speak Latin, even out of class. Latin was also spoken in the Faculty of Medicine. It was not Ciceronian, but was a useful means of communication among the learned all over the world. Readers of Rabelais will remember the Limousin and his amazing jargon. The normal period of medical study for the degree of Bachelor was four years. Two further years of study led on to the licence which gave the right to practise. Finally came the degree of doctor. The total cost of the degrees was about 2,000 livres. Marino de Cavalli, in 1546, reported to the Doge that the University of Paris was attended by sixteen to twenty thousand students, most of them miserably poor, living in the colleges founded for that purpose. A curious description of the toilet of a student in 1555 is given by Victor Gay from the colloquies of Mathurin Cordier. "As soon as I awoke I got up, put on my doublet and my tunic. I sat down on a stool, put on my breeches and stockings, then took my shoes, fastened my breeches to my doublet with

hooks, fastened my stockings with garters above the knee. I took my belt, I combed my head, I took my cap, which I shook well, I put on my gown, and then going forth from the room I went downstairs, made water in the court against a wall, took some water out of a bucket and washed my hands and face, drying them with a towel." The students in the Middle Ages had to work under less comfortable conditions than those of the present day. The class-rooms had only a stool for the professor and a little straw strewn on the ground for the students to sit upon. They wrote on their knees. This position was justified by a decree of Pope Urban V in 1366, in which he says that that position was intended to remove from them the temptation of pride. The medical students went to lecture at six o'clock in the winter and at five in summer. In the sixteenth century a change came over academic life. The literatures of antiquity were studied and imitated, and grammar and rhetoric gradually took the place of logic. The professors read the works of masters, and dictated lectures in which discussions were summed up. Although the literary side of education became greatly developed, medical teaching was still very narrow. Anatomy, for instance, could not be properly learnt, as only the bodies of executed criminals were available for dissection; the professor never handled the scalpel, but was assisted by a prosector, usually a bachelor, who summed up the lesson of the master. But the true prosector was the barber surgeon, who was strictly confined to dissection. Clinical studies were almost entirely neglected. The students were only asked to be present at the lectures in the school and public debates. They attended hospitals only after they had taken the bachelor's degree, and then but very little. Young men intending to be surgeons were apprenticed to a master. Some of them were admitted to the hospitals, as we know from the life of Ambroise Paré, who was companion, or as we should now say, *interne* or house-surgeon, in the Hôtel-Dieu, Paris, for two years. Apprentices apparently discharged the duties of dressers. The lodgings of the students in the Latin quarter were not, as a rule, luxurious. Many lived under the same roof, and there was not much furniture. One room, with a single bed, was usually occupied by two students. The works of Hippocrates and Galen, and some books of medicine and philosophy and Greek and Roman literature, constituted the library of the medical student. Meals were taken where they could be got, but there were places of entertainment suited for every purse. In his leisure hours the student of medicine gave much time to the worship of the *dive bouteille*, especially on feast days. It was a time of great eating, and banquets were given on the least pretext. After every examination there was a dinner at the expense of the candidate, in which wine figured largely. Care was taken that the dinners should be good, for we find that by a special decree dated February 11th, 1546, it was ordered that thenceforward several doctors should be deputed to taste the wines, and see the victuals were good. The professors and students often dined at the same table, took part in the same games, and shared in the same debauches. We are sorry to say that often students were convicted of theft and murder. It may be not inappropriate here to recall the fact that Dr. Routh, of Magdalen, who died in 1854, could remember the hanging of two undergraduates for highway robbery. An order of Parliament dated August 20th, 1544, was issued to stop the acts of violence and excess every day committed in Paris, especially in the University and the adjoining quarters. The University held sway in the Latin quarter, and would not suffer the authority of the police. When students were so clumsy as to get themselves put into prison the masters would go and claim them. There were town and gown riots, especially at the feast of the Laudit, which dated from the twelfth century, and was in reality a religious procession in honour of the true cross, of which the cathedral of Paris had received a fragment in 1109. Although turbulent and licentious, the medical students were for the most part workers. Their examinations were numerous, and required laborious preparation. To say they were occasionally riotous and dissipated is only to say that they were young men of their age.

TOXICITY OF THE URINE IN MEASLES.

It has long been recognized that the diagnosis of measles in its early stages is important from a public health point of view. Even the recognition of Koplik's spots in the buccal mucosa does not permit the disease to be diagnosed early enough for preventive measures. Any method of determining the existence of measles infection at a very early period is, therefore, worthy of attention. Drs. Hans Aronson and Paul Sommerfeld,[1] in the course of their experiments on the urine in connexion with their study of anaphylaxis, have found that the urine of patients suffering from measles contains a thermostabile, dialysable poison, which, when injected intravenously, rapidly kills guinea-pigs and rabbits; as a rule, 2 c.cm. of urine are lethal. They further found that this or a similar poison is present in the urine of anaphylactic animals, and that the urine of patients suffering from what is probably the "fourth disease" and from serum exanthems also acts toxically. The urine of patients suffering from typhoid fever, tuberculosis, diphtheria, whooping-cough, and scarlet fever does not contain any such poison. It is of importance to note that the appearance of the poison does not coincide with the acutest period of the illness nor with the onset of the rash. It is detectable at a very early period, and lasts for a considerable time. It would seem that this urinary toxin is in some manner associated with a hypersensibility of the organism toward certain proteins. In measles there may be some peculiar anaphylactic condition, as is indeed suggested by the fact that during the period of the illness, as von Pirquet has shown, an individual susceptible to tuberculin becomes temporarily insusceptible. So far the test must be made in animals, but it may become possible in future to recognize the toxin chemically. In any case, this quality of the urine of the patient suffering from measles in the earliest stage may prove of practical value.

THE CONVEYANCE OF POLIOMYELITIS BY INSECTS.

The infection of poliomyelitis can often be referred to direct or indirect contact with cases in the acute stage of the disease, but not infrequently it occurs sporadically, apparently in the absence of any acute source. The virus of poliomyelitis has several times been demonstrated in the tonsils and naso-pharyngeal secretion of persons suffering from the disease, and the disease has been reproduced experimentally by swabbing the nasal mucous membrane with the virus. The presence of the virus in dust has also been established, for it can withstand drying and low degrees of temperature. Evidence has recently been brought forward to indicate that healthy people in contact with acute cases may act as carriers of the infection, the virus having been found in their nasal secretions. The fact that the seasonal incidence of poliomyelitis roughly corresponds with the annual prevalence of insects suggested to Howard and Clark[2] the possibility of transmission of the infection by common insects. Experiments were conducted with flies, such as *Musca domestica*, with the bed-bug (*Cimex lectularius*), and lice, and with mosquitos. Flies have access to contaminated products, and may convey whatever virus they pick up therefrom to food and other objects, owing to the fact that they regurgitate in order to moisten and dissolve the stuffs on which they feed. In the experiments the flies

[1] *Deut. med. Woch.*, September 12th, 1912.
[2] *Journal of Experimental Medicine*, December, 1912.

were allowed to feed on infected cords or on materials containing cord emulsion; they were afterwards isolated, and after varying periods were killed with ether, ground up with sand and saline solution, and filtered through a Berkefeld bougie, and the filtrates were injected into the brain of monkeys. The experiments showed that the virus of the disease was retained on or in the bodies of flies for at least twenty-four to forty-eight hours. The viscera were also removed with aseptic precautions, and it was found that the virus existed in the digestive system for at least six hours. In the case of mosquitos the filtrates in no case produced poliomyelitis in monkeys. It has been shown by Flexner and Lewis that the virus exists only in minute quantities in the blood stream of experimentally infected monkeys, so that the conveyance of the disease from this source by biting insects would not seem at first sight to be very probable. Howard and Clark's experiments with lice were entirely negative, but when they allowed bed-bugs to feed on infected monkeys they found that the filtrates on one occasion (in sixteen experiments) produced poliomyelitis when injected into a normal monkey—a remarkable finding in view of the exceedingly dilute condition in which the virus exists in the blood stream. In this case the virus must have been carried by the bugs for at least seven days. More direct experiments have been reported by Rosenau, and by Anderson and Frost,[1] on the conveyance of poliomyelitis by the biting stable fly, *Stomoxys calcitrans*. The flies were allowed daily to bite infected monkeys, and were then transferred to healthy monkeys with the result that the latter all developed the disease seven to nine days after the first exposure.

THE LUNACY LAWS IN GERMANY.

AT the opening sitting of the German Reichstag this winter a debate was raised on the administration of the lunacy law. It appears that some believe that there are many unjust detentions of persons in lunatic asylums, and certain members of the Reichstag sent a petition to the Commissioners, calling for fresh legislation for the regulation of the treatment of the insane. The Commissioners preferred to refer the petition to the Imperial Chancellor. In the debate it was urged that the existing law had proved insufficient to safeguard the interests of the public in respect of frequent incarceration of sane persons into asylums. Dr. Gerlach, in reply, pointed out that the charges of a highly sensational character, which found their way into the daily papers, emanated from patients discharged from asylums who had been obsessed by imaginary grievances during their detention; these grievances continued to obsess them after their discharge. He urged that the medical men who conducted the asylums and the professional members of the Commission were quite capable of protecting people against unjust detention. Dr. Struve also spoke against the folly of this organized campaign against asylum doctors. The matter will be brought up again, it is said, on the discussion on the Budget.

THE UTILIZATION OF SEWAGE SLUDGE.

Two cases of death from sewer gas poisoning occurred in Dublin last week. The accident happened at the Pigeon House Fort, where sewage tanks were erected a few years ago in connexion with the new drainage system of Dublin. A man was overcome by gas in a culvert, and a comrade who went to his rescue was also overpowered; they were both rescued by another workman. The first man was dead when his body was recovered, but the second man, though unconscious, was alive, and was taken to the nearest hospital; he died seven days afterwards, death being due, according to the doctor's evidence given at the inquest, to septic pneumonia. The fatal results are attributed to the inhalation of sulphuretted hydrogen, the presence of which in large quantities is explained by the fact that a large amount of sludge had been stored in one of the tanks since last summer. It had fermented, and the officials at the place had observed a very bad smell for some time and had to make arrangements for the escape of the large quantities of gas that had formed. In connexion with the disposal of the solid part of sewage, an experiment has been carried on for the last twelve months in Yorkshire with an invention of a Dublin man. The solids are collected and compressed into cakes, which are put into large retorts and burned by the combustion of the contained hydrocarbons. The results of this combustion are drawn off and dealt with so as to collect the products evolved. From the cake, which hitherto cost a considerable sum to dispose of, an oil suitable for lubricating and other purposes is obtained, and also sulphate of ammonia, thousands of feet of gas, and a valuable residue in the ashes. The cost is said to be very small, as the necessary heat is got by combustion of the material itself. The amount of gas generated is said to be sufficient to enable a town or city consuming its own sewage cake in this manner to run all the electric machinery for the municipality with the power derived from the gas.

OTTAWA WATER SUPPLY.

FOR some time past the water supply of the capital of the Dominion of Canada has been causing considerable anxiety, and in the hope of finding out the cause and a remedy for the trouble the Government has decided to get the aid of two experts from the Mother Country. We understand that Lord Strathcona, who represents the Dominion in this country, has asked Sir Alexander Binnie, formerly chief engineer to the London County Council, to help the Canadian Government on the engineering side of the problem, and on the bacteriological side he has approached the Metropolitan Water Board for the services of Dr. Houston, Director of Water Examinations. We understand that the Board has felt it its duty to render what help it could to Canada in this important matter, and has allowed Dr. Houston to undertake the work. In a few days these two gentlemen will be on their way to Ottawa, and we feel sure that every Britisher sincerely hopes that they will be successful in suggesting some scheme that will give to the capital of the Dominion a plentiful supply of pure water.

Medical Notes in Parliament.

[FROM OUR LOBBY CORRESPONDENT.]

Isolation Hospitals and Small-pox.—Mr. Black asked the President of the Local Government Board on January 9th whether he was aware that in a report recently issued by the Department on isolation hospitals, Dr. H. Franklin Parsons stated that there was no near prospect that local authorities would find it unnecessary to be provided with hospital accommodation for the isolation of infectious diseases other than small-pox, though the scale on which such accommodation might be needed would vary in different districts; whether he agreed with the view therein expressed; and, if so, why he considered there was a near prospect of further hospital accommodation for the isolation of small-pox being unnecessary. Mr. Burns, in reply, said that the paragraph in Dr. Parsons's report to which reference was made was one dealing with the case of hospitals for diseases other than small-pox. The following paragraph dealt with the question of small-pox hospitals, and there was no suggestion in it that small-pox hospitals were as yet unnecessary.

[1] Cited by Dr. C. J. Martin, BRITISH MEDICAL JOURNAL, January 11th, p. 66.

Scotland.

[FROM OUR SPECIAL CORRESPONDENTS.]

Small-pox and Vaccination at Kirkcaldy.

A recent report of the outbreak of small-pox in Kirkcaldy and Dysart gives details of 43 cases. Of these, 31 were known to have been vaccinated and 12, including an infant infected prior to birth, were either unvaccinated or showed no vaccination scars. There were 13 deaths. Six were patients who showed evidence of vaccination. Of these 2 were females, aged 50 and 52 years respectively, not vaccinated since infancy, one male aged 47, vaccinated in infancy, and another male aged 37, who had been revaccinated twenty-three years previously. The remaining 2 cases were females who both died in puerperium, 1 aged 23 with two vaccination scars, the other aged 33 with one vaccination scar. Seven deaths occurred in persons who showed no evidence of vaccination. Of these, 2 males, aged 47 and 46, were registered as having been vaccinated in infancy, but no vaccination scar was found. An infant now known to have been infected with small-pox before birth was vaccinated when two days old and died six days later after the small-pox rash had appeared.

Excluding 3 cases revaccinated within nine days of infection with small-pox, only 1 revaccinated case (and that revaccinated over twenty years before) occurred during the outbreak. A number of persons were infected who refused the offer of vaccination or revaccination. An analysis of the vaccinated cases reveals the striking fact that in no single instance were there four scars. Of the 31 vaccinated cases, 13 showed only one scar, 16 only two, and 2 showed three scars. A higher standard of vaccination is distinctly indicated than that obtained in the bulk of these cases. Very careful observations have been recorded regarding the vaccinal condition of the cases in the Kirkcaldy outbreak. The antivaccinators have agitated for this, but the details fully maintain the claims advanced for vaccination. It is unfortunate that certificates of "successful" vaccination should be issued, as has frequently happened, since the consequences tend to produce an altogether erroneous impression in the minds of antivaccinators and others. There exists a uniformity in the certificates, but by no means a uniformity in the vaccinations. There are many cases recorded in which certificates have been given without inspection, and the case for vaccination suffers by this, and there are other indications of laxity in regard to vaccination certificates. If certificates are to be taken as proof of vaccination the greatest possible care is essential. It has been suggested that the certificate should contain a statement as to the number of insertions made and the number of vesicles obtained. In the case of public vaccination this information is recorded in the register, but these details are not provided in private vaccination. The Kirkcaldy outbreak was of a severe type, as reflected in the mortality-rate. If the two doubtful cases—registered as having been vaccinated but showing no scars, and who refused the offer of vaccination—are added to those showing definite evidence of more or less imperfect vaccination, the mortality in that class was 8 in 33. The mortality in the unvaccinated class (including the infant born with small-pox) was 5 in 10. The extensive vaccination and revaccination of contacts and of large numbers of the general population in Kirkcaldy has proved to be a valuable weapon in the hands of the authorities in combating the outbreak, which, it is hoped, has now been effectively checked.

The Weather of 1912.

The total amount of bright sunshine recorded during 1912 at the Royal Observatory, Edinburgh, by the Campbell-Stokes instrument was 1,071 hours, or 29.3 per cent. of the possible. This shows a deficit of 308 hours when compared with the average of twelve years, and of 474 hours when compared with 1911. June and August were remarkably sunless, and only aggregated 135 hours, or 40 per cent. of the normal, while December could only muster 16 hours. April was the sunniest month, with 176 hours, but all the others, with the sole exception of September, were below the average, and the year has no parallel during the twelve years over which records extend.

The total rainfall for the year measured 26.91 inches, as against an average for seventeen years of 25.22. April was by far the driest month, the total being only 0.24 inch, but the fall during January, May, October, and November was below the average. August was the wettest month, with 4.75 inches, but Edinburgh was fortunately too far north to share in the phenomenal floods which devastated East Anglia on August 25th, when nearly double the Edinburgh fall for the whole month came down in twenty-four hours. On two days—August 4th and September 30th—the fall exceeded 1 inch, as against one day in 1911 and six days in 1910. There were eighteen consecutive days without rain in April, and twenty in September.

The mean shade temperature for the year was 46.8° F., which is the exact average for the past seventeen years. All the summer months were cooler than usual, and August and September were the coldest on record at this observatory. July was the warmest and January the coldest month. The shade temperature only once exceeded 70° (74.6° on July 12th).

Snow fell on fourteen days during the year, but in no case to any considerable depth, nor did it ever lie for more than a few days.

Ireland.

[FROM OUR SPECIAL CORRESPONDENTS.]

Emigration from Ireland in 1912.

Although over 29,000 emigrants left Ireland last year there was a reduction of over 1,200 compared with 1911. In fact, with only two exceptions—that is, 1908 and 1909—the number for 1912 is the smallest recorded in any year since 1890, before which date such statistics were not kept. In spite of this distinct reduction in the numbers there were six months of the year during which they exceeded those of the corresponding months of 1911. Though no fewer than 20,466 of the 27,477 who emigrated to foreign countries and the colonies went to the United States, there has been a distinct increase in the number going to the colonies. The decrease was distributed over the four provinces, but Ulster, where the decrease is smallest, is still responsible for about 60 per cent. of the total number of emigrants.

Victoria.

Medical Inspection of School Children.

The report of the school medical officers for 1911 has lately been issued, the second since inspection has been instituted. The number of children examined was 9,601. The inspectors state that the year's results amply support the statement in the last report, that a large amount of unsuspected defect and disease exists in the apparently healthy children of the schools. About one child in every six has some defect of vision, one in seven defect of hearing, and one in four defect of the nose and throat, while deformities of posture are frequent, and dental decay almost universal, not one in twenty having a clean mouth. Only about one-third of the children in metropolitan and one-half in country schools escape notification to parents for defects of vision, hearing, nose and throat, and general defects (heart, lungs, etc.). As a result of the notification, the immediate response of parents has been only a moderate one, one in four of all children visiting a doctor, oculist, or dentist. As all Australian boys are, under the Defence Acts 1903–11, required to serve as junior and senior cadets, and as it is necessary to submit each boy to medical examination on his entrance to the service, the question arises whether it would not be more economical and more effective to utilize the school medical inspectors for this purpose. An interesting and unique feature of the work for 1911 was the examination of the aboriginal children at the Lake Tyers State School, sixteen in all. Physically the girls were well developed, and appeared

well above the average in height and weight. Of the defects found the most marked was the presence of enlarged tonsils and of post-nasal growth. Amongst the girls no skin disease was found, but one very bad case came under notice among the boys. Contrary to expectation the teeth were found to be very defective, caries being almost as common as amongst white children.

Correspondence.

ANTIVIVISECTION IN GLASGOW.

SIR,—In my letter which you published on December 14th, 1912, I stated, with regard to the antivivisection lecture given here by Dr. Hadwen, that "another part was devoted to the immorality of drinking alcohol, and the uselessness and danger of vaccination." Dr. Hadwen states in his letter you published on December 28th:

> This assertion is simply amazing and almost unpardonable; not one word about alcohol drinking or vaccination escaped my lips the whole evening.

The following gentlemen were present at the lecture besides myself: Dr. Cathcart, Dr. J. Mill Renton, Dr. William Campbell Mackie, Dr. Charles Bennett, and Dr. H. E. Whittingham. I have spoken to all of them, and they allow me to state that they all agree with me that the following is accurate and true in substance with regard to what Dr. Hadwen said about alcohol and vaccination. He said that the opinion of the public and of the profession had changed with regard to the use of alcohol. He quoted the story of a man who many years ago was refused by an insurance office because he was a total abstainer, and pointed out that now some offices gave specially advantageous terms to abstainers. He said that vaccination was useless and dangerous, and in support of this he said that he had never been vaccinated, that he had frequently been exposed to contagion, but that he had never caught small-pox. He spoke at length upon both these subjects, and said a great deal more than I give here, but that he said these particular things we are all agreed. I have not the slightest doubt that if I knew who had been at the meeting I could produce many more witnesses who would remember these things.

Now this is positive and not negative evidence. One reputable person who is prepared to swear that a certain thing was said upon a certain occasion is worth any number who will swear that it was not.

In view of the fact that Dr. Hadwen actually spoke at length upon subjects with regard to which he declares not one word escaped his lips during the whole evening, it is perhaps unnecessary for me to say that other statements in his letter are made in such a manner as to be entirely misleading. Dr. Hadwen did ask a question regarding the centrifuge. Dr. Hadwen did imply that though Sir Frederick Treves had practised vivisection formerly, he now disapproved of it. This is perfectly obvious from the report in the *Glasgow Herald* which Dr. Hadwen says is almost verbatim. His attack upon Sir George Beatson occupied a large part of his lecture; it occupies more than half the report in the *Glasgow Herald*. I have the report before me and have just measured that part devoted to the lecture, excluding the discussion. Yet Dr. Hadwen refers to this report as supporting the statement that he only made two references to Sir George.

That Dr. Hadwen should consider the recovery of a micro-organism from the body of an individual inoculated with this organism as an astounding feat is more surprising than the feat itself, which any one with any experience in a pathological laboratory must have seen performed hundreds of times as a matter of routine. But then we must remember that Dr. Hadwen considers that Pasteur was "a French charlatan," and that to him the greatest surgeons here and abroad are "Lister and his fatuous school." He regards the peerage conferred upon Lister as "one of those ironies of history which should be a warning to 'science' in the future." Finally, he declines to put what he professes to believe to the proof. He is prepared to risk nothing to demonstrate either that he really believes his own statements, or to prove by demonstration that there is any justification for the cause he advocates, otherwise he would accept my challenge and allow himself to be inoculated with some of those micro-organisms in which he says he does not believe, the organisms having been washed thoroughly free of the "environment" in which he says he does believe.

I have said enough, and more than enough, about Dr. Hadwen and his lecture, but I should be glad if you would permit me to say a few words with regard to an offensive statement in Dr. Hadwen's letter which does not refer to myself only. In writing of me he says:

> He had two or three hundred students at his back, howling, yelling, and gesticulating like dancing dervishes.

This implies that the students were there on my account, came to back me, and behaved disgracefully. As a matter of fact, I had nothing to do with their being there, and was not known to them even by sight. I am not connected with the university. The lecture had been freely advertised, and one of the well-known and disgusting antivivisection exhibitions had been in the town for some time. With regard to the behaviour of the students, speaking as one who has had a good many years' experience in official capacities of university students, I have no hesitation in saying that they were extraordinarily good tempered under considerable provocation. The tub-thumping, gesticulating, and posturing type of oratory is irresistibly funny to the healthy male youth, which Dr. Hadwen evidently did not realize. Had I, as he did, waved my arms and body about in the course of any of the lectures I have had to give in different universities I should have expected, and doubtless should have got, *at least* the same treatment as he did. However, they gave him a perfectly fair hearing in spite of the interruptions, and received his grossly offensive remarks about themselves with perfect good humour. They evidently regarded his exhibition of temper as being as funny as his oratorical methods. They came to see fair play, and they achieved their object admirably. Every one who spoke was subjected to interruptions, just as Dr. Hadwen was, but every one was allowed to say what he wanted to say as far as the students had anything to do with the matter.—I am, etc.,

Glasgow, Dec. 29th, 1912. CHARLES WALKER.

HUMAN AND BOVINE TUBERCULOSIS.

SIR,—In the letter of Dr. T. Readman, published in the BRITISH MEDICAL JOURNAL of January 11th, occurs the following remark: "The poorer classes in China do not suffer from tuberculosis, whereas among the dominant Tartar class (milk and meat consumers) the disease is prevalent." China is a large country, and European medical men who have had experience of disease amongst the Chinese must be comparatively few. It would be interesting to learn something of the nature of the experience of the medical man who gave rise to the above statement. A relative of mine, who is medical officer to a mission hospital in China, has told me that the only cattle in the district in which his hospital is situated are draught animals. Children never under any circumstances are given milk from the cow, yet all the forms of tuberculosis met with in England are admitted into the hospital for treatment.

Preconceived ideas often determine the character of observations, and it is justifiable to doubt whether any of the statements quoted by Dr. Readman would bear careful investigation. Amongst these statements is one which says that "tuberculosis is unknown in Morocco, where there are no European dairy cows." Of medical experience in Morocco I know little, but a medical man—also a relative—resident for twenty-three years in districts in Central Africa, where the natives possess no domestic cattle, has informed me that tuberculosis is by no means unknown.

We are asked to await with equanimity the publication of the full reports of the Edinburgh investigation upon questions connected with infection from bovine tuberculosis. Edinburgh justly holds a high reputation throughout the world for soundness of judgement, but even in Edinburgh it is possible for preconceived ideas to influence observations and conclusions of the mind. Although the interest of some medical men in Edinburgh in various aspects of tuberculosis is stimulating, certain

teaching which emanates from there is, it seems to me, likely to give rise to difficulty.

In another part of the same issue of the BRITISH MEDICAL JOURNAL is a reference to the last annual report upon medical inspection of school children by Sir George Newman. It is suggested that the school children might with advantage be referred to specialists when the question of the presence of pulmonary tuberculosis arises. In a previous report respect has been expressed for the teachings of Edinburgh in the matter of tuberculosis in children. To refer children to specialists who hold Edinburgh views upon the diagnosis of pulmonary tuberculosis in children, I believe, would be unfortunate. It is my contention that the teaching which is becoming widely spread from Edinburgh displays little knowledge of morbid affections of the lungs, of chronic nature, occurring in children as seen in the *post-mortem* room, and that reliance upon methods of diagnosis without this knowledge will militate against successful dealing with the disease.—I am, etc.,

January 13th. THEODORE FISHER.

THE SPHYGMOGRAPH, REFERRED PAIN, AND SOMERSAULTS.

Sir,—There are three articles in the JOURNAL of January 11th which deserve to be specially noticed: (1) "Dynamical Diagnosis of the Pulse." I am old enough to remember when neither the sphygmograph nor thermometer were used by physicians even in the Edinburgh School of Medicine. By working with these two instruments, while resident physician in the University clinical wards of the Royal Infirmary in Ediburgh, I made observations and experiments which, owing no doubt to their originality, being made the subject of my graduation thesis, were awarded the gold medal. The thermometer is now regarded as an indispensable instrument in the diagnosis of disease, chiefly, I believe, through the improvements on the old instrument, but the sphymograph, in spite of its imperfections is a far more reliable guide, not only in diagnosis but in treatment, than the thermometer. Both require skill and care in their use, for both may do more harm than good in unskilled hands. Few would think of trusting to a nurse to take a sphygmographic tracing, but a reliable observation with the thermometer is almost as difficult; nevertheless, the nurse too often has to record the temperature of the patient. I have seen temperature charts, used to illustrate febrile diseases by physicians, whose falsity was apparent to any one who had used the thermometer in such diseases with care and intelligence. By its use I was able to show that in every infectious disease there is a primary and a secondary fever, before any bacillus had been discovered to account for them; but I found that the sphygmograph gave a much earlier indication of a favourable or fatal issue than the thermometer, and I feel sure that in time it will be considered as necessary as the thermometer in the diagnosis and treatment of disease. As to the "plenitude" and "intensity" of the pulse beat, without the previous study of sphygmographic tracings they can have no meaning. Hippocrates himself without a sphygmograph would have had no chance with the average modern practitioner, who understands the indications that instrument is capable of giving. I would therefore urge my professional brethren, in spite of the Insurance Act, to take to the study of the sphygmograph and they will get a rich reward, were it only for their surpassing skill in proguosis. The sphygmomanometer is, so far as I have seen, a comparatively useless instrument, and owes its popularity more to the ease with which it can be used, and the little skill required in its use, than to the value of any indications it gives.

2. "The Sensory Phrenic and Its Organs." That article I look upon as an acknowledgement of our ignorance of the sensory nerves, and the need there is for more knowledge as to their relation to those of motion. I have little doubt that every ache and pain will in time be discovered to be "referred." Toothache and neuralgia in the region of the teeth is an example deserving of study. With a decayed tooth we will have toothache every time we make the saliva acid by sugar for example, and if we continue for three days to take too much sugar we will have neuralgia all round the decayed tooth proceeding from the nerve centre, and owing to the over-acidity of the lymph. The toothache as well as the neuralgia is "referred," but neither occurs without some decay. Such is with every ache. A solution of continuity, or some degenerative change in a spot on the skin, or on the mucous membrane of any part of the intestinal tract, will cause first an ache and then neuralgia, all "referred," but perhaps far from each other. Thus a wrong meal may cause angina pectoris, apoplexy, or heart failure in those suffering from the Russian physician's new disease, "idiopathic anasarca"—just another name for the "plethora" of Hippocrates.

3. "Somersaults at Sixty." This article rightly understood emphasizes the fact that it is not years that make us stiff and unable to turn somersaults, but the bad habit of eating for pleasure and by the clock. If the Romans could conquer the world, eating only one meal in the twenty-four hours, what excuse can we have for eating oftener? If we do, need we wonder that we require doctors, of whom Rome in her best days would have none within her walls.—I am, etc.,

Denholm, Hawick, Jan. 11th. JOHN HADDON, M.D.

NAPOLEONIC RELICS.

SIR,—With reference to the interesting address by Dr. A. Keith, on the alleged *post-mortem* relics of Napoleon, the question is raised as to the whereabouts of the molar extracted by Dr. O'Meara, and sold at the sale of the latter's effects for 7½ guineas. This tooth is without doubt in Madame Tussaud's Museum, and has the following label attached:

"Tooth of Napoleon, extracted by Dr. O'Meara. It is said that the Emperor suffered much, and had three extracted by him. On visiting Italy the doctor gave one to Madame Mére, one to the ex-king of Spain—Joseph—and the last he kept."

The relic is an upper third molar. In the same museum, among several other personal belongings of the Emperor, is also exhibited a toothbrush which has no apparent signs of wear.

In *Napoleon, the Last Phase*, by Lord Rosebery (p. 231), it is stated:

"His digestion endured for a life-time, hearty meals, devoured in a few moments, and at odd times. His first tooth was extracted at St. Helena, and then it appears unnecessarily. But this operation was the only one he ever under-went.

In the BRITISH MEDICAL JOURNAL (March 2nd, 1912), the following remarks with reference to his rapid feeding appear:

"Napoleon ate very fast, remaining at the table only from eight to twelve minutes—a bad habit, which caused continual indigestion. This haste led to neglect of ordinary decencies of the table, the Emperor often using his fingers in place of a fork or a spoon. He even drank out of the dish, and steeped his bread into the sauce. He followed no order in his feeding, passing from side dishes to the *hors d'oeuvres* and back again to the roast. He would not be trammelled by the order of a classic meal.

According to the recent work by Dr. Chaplin, *The Illness and Death of Napoleon Buonaparte*, there is a strong possibility that the cancerous condition of Napoleon's stomach arose from chronic gastric ulceration, and when we consider the peculiar habits of Napoleon when feeding, it is not startling that his gastric apparatus broke down from the abnormal strain, and this would naturally predispose to malignant growth.

I do not know of any available information as to Napoleon's back teeth, but in Lord Rosebery's work are quoted the following observations on Napoleon's appearance (p. 254): "Teeth are bad and dirty but he shews them very little'; and also, "Good white, even teeth, but small (he rarely showed them)."—I am, etc.,

CYRIL H. HOWKINS, M.R.C.S., L.D.S.

Birmingham, Jan. 15th.

UNDER the will of the late Mrs. Annie Maria Jones, of Rusholme, the Victoria University and Manchester Royal Infirmary each receive a donation of £1,000. Other bequests include sums of £500 to the University College of Wales at Aberystwyth, and £300 each to the Children's Hospital at Pendlebury, Manchester, the Christie Cancer Hospital, the Manchester Surgical Aid Society, and the gynaecological department of St. Mary's Hospital. The testatrix was the widow of the late Mr. Thomas Jones, who until his death some fifteen years ago was Professor of Surgery at Owens College.

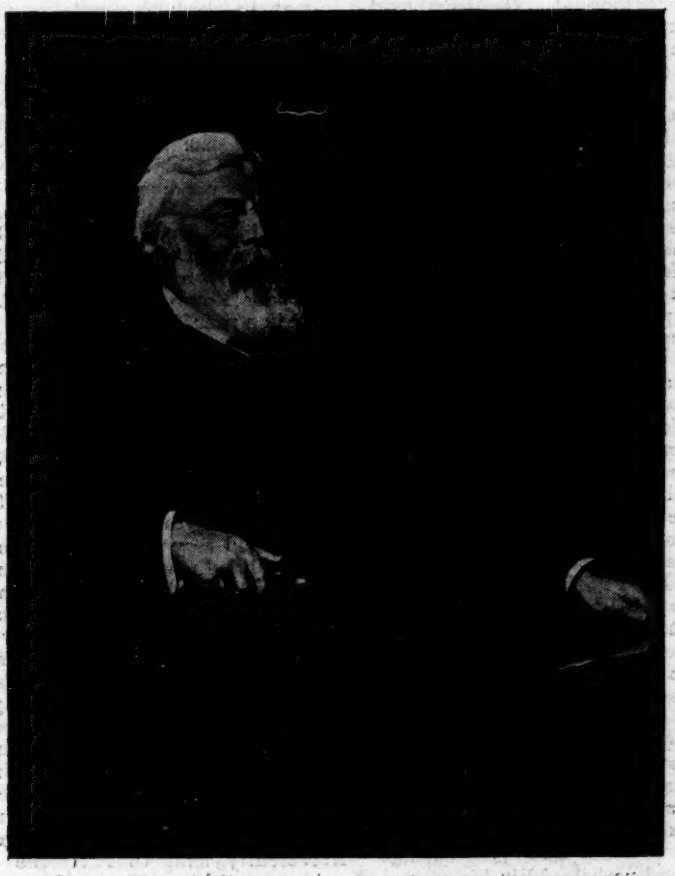
Obituary.

WILLIAM HOWSHIP DICKINSON, M.D.CANTAB., F.R.C.P.LOND.,

CONSULTING PHYSICIAN TO ST. GEORGE'S HOSPITAL.

THE announcement of the death on January 9th of Dr. William Howship Dickinson will be received with deep personal regret by all old students of St. George's Hospital who are approaching or who have now reached middle age, as well as by many others who knew him at the Hospital for Sick Children in Great Ormond Street and as an active member of the medical societies of London.

William Howship Dickinson was born at Brighton in 1832 and educated at Caius College, Cambridge, of which he was at the time of his death an honorary fellow. He entered St. George's Hospital in 1851 when J. A. Wilson, Nairn, Page, and Bence Jones were physicians and Pitman and Fuller assistant physicians. He graduated M.B. Cantab. in 1859 and M.D. in 1862. His first appointment at St. George's Hospital was that of curator of the museum. At that time there was a strong company of Cambridge men at St. George's Hospital with Timothy Holmes and Dickinson at their head, and included Reginald Thompson, Robert James Lee (son of Dr. Robert Lee, for many years obstetric physician to St. George's Hospital), and Sir William Dalby. He became assistant physician to St. George's Hospital in May, 1866, physician in 1874, and became consulting physician on his retirement in January, 1894.



W. Howship Dickinson

Dr. Dickinson was appointed assistant physician to the Hospital for Sick Children, Great Ormond Street, in 1861, physician in 1869, and consulting physician in 1884.

He became a Member of the Royal College of Physicians of London in 1858, and was elected a Fellow in 1865. He held many offices in the College; he was an examiner for three periods between 1872 and 1884, he served on the Council from 1879 to 1901, was a Censor in 1885–86, and Senior Censor in 1892. He delivered the Croonian Lectures in 1876; the Lumleian, on the tongue as an indicator of disease, in 1888; and the Harveian Oration in 1891. He was an examiner in medicine to the Royal College of Surgeons of England at various periods, and to the universities of Cambridge, London, and Durham. As an examiner he was strict but courteous, and in oral examinations put the candidate at his ease by giving him the impression that the object was to ascertain what he knew and not so much what he did not know.

Dr. Dickinson was vice-president of the Section of Pathology and Bacteriology at the annual meeting of the British Medical Association held at Cambridge in 1880, and president of the same Section at the annual meeting at Bournemouth in 1891. He was president of the Section of Diseases of Children at the annual meeting at Bristol in 1894.

We are indebted to a colleague of Dr. Dickinson's for the following estimate of the value of his contributions to clinical medicine:

Dr. Dickinson was an all-round physician and wrote on nearly all branches of medicine. His advice was most often sought in consulting practice for diseases of the kidney and of children on account of the book (1875–85) on renal and urinary affections and because of his long connexion with the Hospital for Sick Children; but his contributions to diseases of the nervous, cardio-vascular, and digestive systems were numerous and always worthy of attention both for the matter and for the purity of his Addisonian English. With the exception of a now forgotten *Experimental and Pathological Inquiry into the Functions of the Cerebellum* (1865), which entailed operations upon snakes, frogs, and fish, his work was based on hospital cases observed during life and carefully checked by the *post-mortem* results, the statistical method being largely used in arriving at conclusions. It is difficult to decide how far medicine of the present is indebted to writers of a past generation; for a few years after a fresh point is established the observer's name accompanies the statement; but except on epoch-making advances the name soon drops out of the current text-books. In order to form a just impression of his influence on contemporary medicine, reference will now be made to some of Dr. Dickinson's more important contributions, most of which are referred to in the first edition of Fagge's *Principles and Practice of Medicine* (1886). He attacked the embolic hypothesis of chorea, and described arterial haemorrhages and periarterial degeneration in the brain and cord (1875). From his experience at the Hospital for Sick Children, Great Ormond Street, he wrote on the visceral changes in rickets and on hepatic cirrhosis in children. In a statistical paper on the morbid effects of alcohol as shown in persons who trade in liquor (1872) he showed that alcohol favours tuberculosis of all sorts, but contended that the injurious effect of alcohol on the kidney had been exaggerated, on the ground that the incidence of renal changes was practically equal in 149 persons exposed to alcohol and in a corresponding series not so handicapped. His observation of hereditary albuminuria in four generations of a family has not, perhaps, attracted its due share of attention. Although Treitz had long before described uraemic ulceration of the intestine in chronic renal disease, and ascribed it to the irritating effects of ammonium carbonate, Dickinson's account of albuminuric ulceration was entirely independent; he examined 22 cases, including three of gastric ulceration, and brought forward evidence to show that the ulceration was due to previous haemorrhage in the intestinal wall. By a long series of observations and drawings made by his own hand of sections he showed that the media of the larger arteries is hypertrophied in chronic renal disease. His Harveian Oration on Dropsy (1891) and an elaborate

paper on this same subject in the *Medico-Chirurgical Transactions* for 1892, in which he concluded that the dropsy was truly cardiac though not cardiac *ab initio*, were based on prolonged examination of the cardiac vascular system in renal disease. Influenced no doubt by Fuller's results at St. George's Hospital, he was a strong advocate of the alkaline treatment of rheumatism, and later brought forward statistical evidence in favour of the view that the incidence of cardiac complications is lowered by adding full doses of alkalis to salicylates. In 1897, when President of the Royal Medical and Chirurgical Society, he gave an account of some cases of pure aortic stenosis in which the only murmur was a musical apex bruit due to mitral regurgitation.

During its periods of greatest activity, when morbid anatomy constituted progressive pathology and was advanced by the younger clinicians, Dr. Dickinson was a prominent figure at the Pathological Society of London, of which he was successively Secretary (1869–71), Vice-President (1872), and President (1889–90). He contributed numerous papers and took part in several important debates, such as those on diseases of the lymphatic system, including leukaemia and lymphadenoma (1870), on lardaceous disease (1879), which he introduced, and on the morbid anatomy of diabetes (1883).

On the last two subjects he had previously expressed very definite opinions, which, though they have not met with the sanction of general opinion, are of some historical interest. In 1867 he read a paper before the Royal Medical and Chirurgical Society, in which he argued that lardaceous or amyloid disease was due to the presence of de-alkalized fibrin in the affected organs, and that this infiltration was caused by the removal of potash which occurred in the suppurative processes responsible for the change. He therefore proposed, as a more accurate title, "depurative disease." When, twelve years later, he opened the discussion at the Pathological Society on this subject, his views met with considerable criticism and opposition. In 1870, at the Royal Medical and Chirurgical Society, he described as "the morbid changes in the nervous system in diabetes" empty spaces around the blood vessels, especially the arteries, in the central nervous system. The significance of this change, which was soon widely copied into text-books, was subsequently challenged at the discussion at the Pathological Society by Dr. F. Taylor and Dr. Hale White, and a committee appointed to report on the question came to the conclusion that the nervous system does not present any constant lesion in diabetes, and that some of the appearances are due to artefacts.

He was a student of disease rather than of medical literature, and until the time limit necessitated his retirement from the active staff of the hospital was constantly engaged on some clinico-pathological problem or research. Untiring in collecting his data, he stuck to his conclusions against all opposition, and made a vigorous fight for his beliefs. This was exemplified by the controversy on what he termed "the presystolic murmur falsely so called." Though a notable physician and pathologist in his generation, it seems unlikely that his name will be specially connected with any important advance in the science at which he worked so vigorously.

Dr. Dickinson retired some years ago to his house at Tintagel, where he eventually died.

Dr. Dickinson married a daughter of Dr. James Arthur Wilson, and had four daughters and two sons, one of whom, Dr. William Lee Dickinson, a man of much promise, died at an early age in 1904; the other son entered the Church.

We are indebted to another colleague of Dr. Dickinson for the following appreciation:

With Dr. William Howship Dickinson there passed away a most remarkable individuality, a man of great originality of thought, who brought to bear upon any subject which occupied his attention ideas peculiarly his own and oftentimes somewhat at variance with the opinions of his contemporaries. He held strong views on many subjects, and always made a gallant fight in supporting them.

Whatever he did, whether it was a walk from London to Brighton in the days of his youth or the strenuous advocacy of a theory in his later years, he always threw his whole soul into the work, and, though he used to proclaim himself to be a man of peace, he seemed in reality to enjoy the amenities of controversy.

Dr. Dickinson was a great reader, and in consequence his conversation was always interesting and attractive. He had a quaint way in expressing himself and a great sense of humour. As an instance of this may be a remark which he made once to the writer on being told that an ardent student had had engraved on the stage of his microscope the words, "All thy works praise thee, O Lord." "I should have thought," said Dickinson, "'We magnify thee, O Lord,' would have been more appropriate." This sense of humour contributed greatly to his popularity; it was one of his chief characteristics and one of the main attractions of his daily visits to the wards of the hospital, where his audience was always a large and appreciative one. His contributions to medical literature were many and various and well known. It is only necessary to mention in this notice his early work on the kidney, to which his reputation as a pathologist was due.

A certain abruptness of manner, probably the result of shyness, was often liable to repel a first acquaintance, and those who were not fortunate enough to be able to improve that acquaintance often credited him with a curtness which he never intended. As soon as the ice was broken one knew the man for what he was—genial, witty, and well informed. He delighted in the society of men, and was never happier than at a gathering of a dining club or when entertaining friends at his own house. Many of his sayings are still household words at St. George's Hospital, and many of those who listened to them are now asking sadly: "Where be your gibes now . . . your flashes of merriment that were wont to set the table in a roar?"

Mr. G. R. Turner, senior surgeon to St. George's Hospital, has written the following note at our request:

Dr. Dickinson in the Seventies and Eighties of last century was a great character—in the best sense of the word—at St. George's Hospital, and his practice was followed by crowds of students anxious not only to acquire medical lore and knowledge but to have the opportunity of appreciating the quiet humour with which he abounded. He believed very thoroughly in the surpassing importance of his art and made others believe it. He was in earnest and made others earnest. He regarded a hospital physician as the noblest work of God, but had a wholesome, and not unmerited, dislike of the surgery of his early days. He was always a little behind the triumphs of Listerism and spoke "of those dismemberments and eviscerations that surgeons regard with such complacency, their patients with such inquietude." He constantly advocated "the safer processes of nature," even when mechanical intestinal obstruction existed; indeed, to him surgery was a *dernier ressort*, and the surgeon but a bradawl or other occasionally useful tool. He was a masterful man in his diagnosis, to which he would hear no objection—indeed, it was irreverently said that if the required dullness was not present his stiffened finger made it. He disliked a diagnosis being made for him by his house-physician. On one occasion, on being taken to a patient suffering, he was told, from gout, he said, "A more typical case of rheumatism I never saw." Yet next day it was "typical gout" and treated as such. The interest of the patients was ever his first care, and though sometimes afraid of they were always fond of him. This too was the way students, terming him affectionately "Old Dick," also regarded him. As a lecturer he always held his audience, and enlivened even the dullest details of pathology by apt illustration and story. Of his stories he enjoyed none more than those that told against himself and his habit of sometimes thinking aloud. He was a man of backbone and character, upright, cultured, and honourable—a good friend and a bitter enemy. His picture hangs in many an old St. George's man's consulting-room, and his memory will long be affectionately treasured by them.

An old colleague and contemporary writes:

I believe no more honourable, straightforward man could be imagined, and no more true friend could any man have. His watchword was *truth*. Through a somewhat rough exterior could be detected a tender heart by those who knew him.

Dr. S. RUSSELL WELLS, who was at one time house-surgeon, house-physician, and medical registrar to St. George's Hospital, writes:

Dr. Howship Dickinson was an excellent representative of a type of physician formerly far more common than at present. Cultured, skilled, possessing considerable literary attainments and a pungent wit, he rather prided himself upon a certain brusqueness and on the freedom with which he stated his opinions.

The writer well remembers how profoundly he influenced the St. George's students of some twenty-five years ago; his aphorisms, his strong and freely expressed views and criticisms of men and things, burnt themselves into one's mind and remain as lasting impressions. Some feared and rather disliked him, but those who got to know him well admired and were devoted to him.

His intolerance and contempt for all that savoured of pretentiousness, sham, or incompetence manifested itself on many occasions. A student who was asked what he thought of the tension of a certain patient's pulse, and who tried to conceal his ignorance by saying it was "a little tense and a little soft," was promptly told that he was "a little wise and a little fool." A drunken valet, an in-patient of the hospital, who hoped to obtain extra privileges and consideration by sententiously informing Dr. Dickinson that he was in the service of Lord So-and-So, and was in fact his lordship's most confidential servant, received as answer: "I don't know and I don't care who is your master; I know what you are, you are a drunkard, a beer drunkard;" and on the man protesting that he was almost a teetotaler, he was told, "You are a drunkard, and, what is more, you are a liar."

He encouraged an independence of mind, and taught that because a view or theory was popular at the moment it should not be accepted on that account alone. Medical writers and speakers he divided into two classes: those "who spoke because they had thought and had something to say," and those "who spoke because they thought they had to say something." If a student entered the lists with him and acquitted himself well he accounted it to the student's credit. The capping a quotation, a clever rejoinder, or a really apposite criticism pleased him. On one occasion he informed his clerks that he had been at a dinner of the College of Physicians the night before, and that there had been a menu with an appropriate Shakespearean quotation to each item, and asked them if they could give him a suitable one from Milton for the wine, say the port; one of the clerks replied, "You said, sir, it was a dinner of the College of Physicians; might I suggest, 'Sons of Belial flown with insolence and wine.'?" Dickinson chuckled, and confessed that he thought it was better than the one that had occurred to him—namely, "The memory of that heavenly port."

He was intensely proud of his hospital and its traditions; woe betide the student who spoke of the digitalis, squills and mercury pill as Guy's pill, he would immediately be told that that combination was first devised by Matthew Baillie, a former St. George's physician—"Guy's pill, indeed, they stole our pill." The great Thomas Young, who was at one time physician to St. George's Hospital, was one of his heroes, and he surprised many by showing from the old records of the hospital that the average mortality in cases of pneumonia treated by Young was distinctly lower than the present mortality in that disease. *Apropos* of pneumonia, it may be mentioned that he was never tired of impressing on the students the harm that may be done by lengthy examination of such cases. "Make sure of your diagnosis, and then do not examine a pneumonia patient again until he is better, unless there is some very real occasion for it; more than this is gratifying an idle curiosity on the part of the physician at the expense of the patient."

Howship Dickinson was essentially a clinical physician, and had high ideals of the duties and responsibilities of his vocation; he taught that whenever a patient died one should if possible obtain a *post-mortem* examination, and afterwards ask oneself three questions—first, "Have I done anything that can have hastened the end?" Secondly, "Could I have done anything to have delayed or averted it?" Thirdly, "In light of what I now know how should I treat a similar case in future?" He constantly impressed upon us that we should endeavour to place ourselves in the position of the patient we were seeing, and then adopt that line of treatment we should desire to have employed on ourselves under like circumstances.

That all his views and opinions on matters medical should subsequently have been proved to be correct is hardly to have been expected, but the majority of his former pupils must feel, like the writer, that they owe an incalculable debt to his sane, robust, and stimulating teaching.

The portrait here reproduced is from the autotype print of the oil painting by the Hon. John Collier, which hangs in the board room of St. George's Hospital.

W. R. DUGUID, M.A., M.D.,

BUCKIE.

WE regret to have to announce the unexpected death, on January 10th, of Dr. Duguid, a highly respected Banffshire practitioner; it occurred with startling suddenness when he was attending one of his patients at a farm in the country. He was going about in his ordinary health at his duties the previous day, and when he received a call to a patient at Williamstown, about three miles out of town, he motored there. The sympathy felt in the community was expressed in the tolling of the town bell for the passing of one who for half a century was prominent, not only in Buckie, but throughout the North of Scotland. As President of the Banff, Elgin, and Nairn Division of the Association, he has been attending regularly all meetings in connexion with the National Insurance Act. As the Representative for his Division he attended the last Representative Meeting, and had a few words to say on the conditions of practice in his area; while only a week or two ago, as the Representative of his area on the Scottish Medical Insurance Council, he attended the last meeting in Edinburgh. Professionally, he was well known and highly esteemed by his brethren, and exceedingly popular, especially among the fishing community. Dr. Duguid, who was 72 years of age, and was born at Udny, was educated at Green of Udny School, Aberdeen Grammar School, and Aberdeen University. He took the M.A. degree as long ago as 1858, he graduated M.B. and C.M.—both with honours—in 1862, and took the M.D. degree some years later. Dr. Duguid went to Buckie over fifty years ago, and opened up a practice at a time when Buckie was merely a collection of fishing hamlets. His first appointment was that of parish medical officer, which he held all along. He was at various times during his career Provost of Buckie, Chairman of Rathven School Board, President of the Moray Firth Fisheries' Association, and Surgeon-Lieutenant-Colonel of the Banffshire Volunteers. He was also an Honorary Sheriff-Substitute of Banffshire, and a Justice of Peace for the county. He served as a member of the Scottish Fishery Board for fifteen years. He had for the past few weeks been giving sittings to Mr. Allan Sutherland, of Aberdeen, who is staying in Buckie, for a public presentation portrait that was subscribed for over a large area, in commemoration of the completion of his professional jubilee. Fortunately the portrait is in a sufficiently advanced state to make its completion an easy matter. Dr. Duguid was a widower, his wife having died some years ago. One of his sons has been associated with his father in the practice.

JOHN LOUIS CHAMBERS, L.R.C.P.EDIN., M.R.C.S.ENG., L.S.A.

ON December 21st, 1912, passed away at his residence, 249, Hackney Road, Dr. John Louis Chambers, at the age of 65. His practice was one of the oldest in the north-east of London, having been founded more than a century ago by his uncle, the late Dr. Frederick Chambers, who practised there for many years, subsequently retiring to Margate, where he was thrice mayor. He was succeeded by Dr. John Chambers, the father of the subject of our notice. John Louis Chambers received his medical education at the London Hospital, took the diploma of L.S.A. in 1869, that of L.R.C.P.Edin. in 1870, and that of M.R.C.S.Eng. in 1871. He was born in the house in which he died, had lived all his life in Shoreditch, and was one of the senior practitioners in that borough. His familiar figure will be sadly missed in the locality and his loss lamented by a large circle of patients. He attended the meeting of the

City Division at the Shoreditch Town Hall, on December 13th, and voted with the majority. He seemed then in his usual health, but on December 15th he had a slight fit and developed symptoms of heart failure. In spite of unremitting care and attention, he gradually became worse and died, as stated, on December 21st.

WE regret to record the death of Mr. ALBERT HENRY HUGHES, of Brunswick Terrace, Plymouth, at the early age of 40. It took place on December 10th, 1912, after a very brief illness, due to appendicitis. A Bristol man by birth, Mr. Hughes received both his general and professional education in that city; he became L.S.A. in 1905, and settled two years later in Plymouth. There he enjoyed much popularity, especially among the poorer classes in the east end of the town, among whom his practice chiefly lay. He also held an appointment under the Poor Law guardians. He had begun to take interest in public affairs, and contested an election for the town council of Plymouth a year or two ago. His funeral was attended by a large gathering of his friends, including representatives of various public bodies and of his professional colleagues. Mr. Hughes, who was a member of the Plymouth Division of the British Medical Association, married some six years ago, and is survived by his wife and a daughter.

DEATHS IN THE PROFESSION ABROAD.—Among the members of the profession in foreign countries who have recently died are: Dr. L. Wille, professor of psychiatry in the University of Basel, aged 78; Dr. Alfred Genzmer, extraordinary professor of surgery in the University of Halle, aged 61; Professor Jules Felix, of Brussels, formerly physician to the household of the King of the Belgians, well-known as a hygienist, and one of the founders of the Belgian Society of Hydrology; Dr. Eduard Clason, sometime professor of anatomy in the University of Upsala; Dr. Caesar von Ramdohr, formerly professor of obstetrics in the New York Post-Graduate Medical School and Hospital; and Dr. J. Wood McLane, emeritus professor of obstetrics in the Medical Department of Columbia University, New York, aged 73.

The Services.

HEALTH OF THE NAVY.

THE *Statistical Report of the Health of the Navy for the Year 1911*[1] has recently been issued.

Summary of Returns for Total Force.

The returns for the total force for the year 1911 show a continuous improvement in the general health of the fleet as compared with the preceding five years. The case, invaliding, and death ratios for the year under review are again lower than the average ratios for the last five years, and the average loss of service for each person compares favourably with the five years' ratio and with that of 1910. The total force, corrected for time, in the year 1911, was 117,100, and the total number of cases of disease and injury entered on the sick list was 76,463, which gives a ratio of 652.97 per 1,000, a decrease of 26.96 as compared with the average ratio for the preceding five years.

The number of entries per man for disease and injury was: Home Station, 0.76; Home Fleet, 0.56; Atlantic Fleet, 0.63; Mediterranean, 0.67; North America and West Indies with Fourth Cruiser Squadron, 0.56; China, 0.64; East Indies, 0.87; Australia, 0.78; Cape of Good Hope, 0.67; Irregular List, 0.73. The average for the total force was 0.65, which is identical with the average for 1910. The average number of men sick daily was 3,170.33, giving a ratio of 27.07 per 1,000, a decrease of 1.00 in comparison with the previous five years. The total number of days' sickness on board and in hospital was 1,157,172, which represents an average loss of service for each person of 9.88 days, a decrease of 0.36 as compared with the average for the preceding five years. The ratio per 1,000 of men sick daily on the various stations was: Home Station, 35.85; Home Fleet, 23.36; Atlantic Fleet, 23.7; Mediterranean, 25.11; North America and West Indies and Fourth Cruisor Squadron, 19.84; China, 24.43; East Indies, 31.3; Australia, 23.39; Cape of Good Hope, 22.54; and the Irregular List, 40.32. For the total force the ratio was 27.07. The North America and West Indies Station, as in 1910, shows the lowest sick rate, and, as usual, the Irregular List the highest, but this is due to the inclusion of sickness of invalids on passage from foreign stations.

Invalidings.

The total number invalided was 2,110,[2] which gives a ratio of 18.01 per 1,000, a decrease of 1.81 in comparison with the average ratio for the preceding five years. The total number of persons *finally* invalided was 1,876, of whom 71 were invalided after refusing operative treatment. The ratio per 1,000 of *final* invaliding was 15.94, a decrease of 0.5 as compared with the average for the previous five years. Of the 2,110 invaliding, 1,970, or 16.82 per 1,000, were for disease, and 140, or 1.19 per 1,000, for injury.

Deaths.

The total number of deaths was 366, giving a ratio of 3.12 per 1,000, a decrease of 0.23 in comparison with the average ratio for the last five years. Of this number, 260, or 2.22 per 1,000, were from disease, and 106, or 0.9 per 1,000, from injury.

General Diseases.

The following is a summary of the returns under the head of general diseases:

Small-pox.—One case from the Atlantic fleet, and occurred in the *Formidable*. The disease, it is stated, was probably contracted at Gibraltar where that ship was undergoing a refit, and was of moderate severity.

Cow-pox.—845 cases, 714 of which were from the Home Station.

Chicken-pox.—15 cases, 13 of which were contracted in Home Waters, and 2 in the Mediterranean.

Measles.—227 cases, with 4 deaths.

Rubella.—279 cases; 194 from the Home Station, 48 from the Home Fleet.

Scarlet Fever.—120 cases, with 1 invaliding.

Dengue.—2 cases, both from Australia.

Mumps.—101 cases. The Home Station contributed 43, the Home Fleet 36, and the Australian Station 14.

Other Infective Diseases.—1,598 cases (including all the preceding cases). The total includes 5 cases of septicaemia, 2 of osteomyelitis, and solitary instances of ulcerative endocarditis, pyaemia, and plague. Five deaths resulted from septicaemia, 2 from ulcerative endocarditis, 1 from osteomyelitis, and 1 from pyaemia. A case of sequelae of osteomyelitis was finally invalided. The discrepancy between the number of entries for ulcerative endocarditis and the number of deaths is due to a case which was entered originally under another heading.

Influenza.—1,364 cases, with 2 deaths, giving a decrease of 12.82 in the case ratio as compared with the average. The disease was, on the whole, of a very mild type.

Diphtheria.—172 cases.

Enteric Fever.—137 cases, with 2 final invalidings and 30 deaths. The case and death ratios per 1,000 were 1.16 and 0.25 respectively, as compared with 1.47 and 0.22, the average ratios for the previous five years.

Mediterranean Fever.—6 cases, with 1 final invaliding. The case ratio is 0.05 per 1,000, as compared with an average of 0.5. Five fresh infections are reported from the Mediterranean, three Englishmen and two Maltese being affected, in three of whom the vehicle of infection was undoubtedly unboiled goat's milk partaken of on shore.

Pyrexia.—350 cases, giving a decrease of 0.68 in the ratio as compared with the average. The Mediterranean contributed 144 of the total, but the report states that many of these were probably "sand-fly" fever.

Dysentery.—55 cases, showing a decrease in the case ratio.

Pneumonia.—455 cases, with 5 final invalidings and 30 deaths.

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[1] London: Published by His Majesty's Stationery Office. To be purchased, either directly or through any bookseller, from Wyman and Sons, Limited, Fetter Lane, E.C., and 32, Abingdon Street, S.W.; or His Majesty's Stationery Office (Scottish Branch), 23, Forth Street, Edinburgh; or E. Ponsonby, Limited, 116, Grafton Street, Dublin; or from the Agencies in the British Colonies and Dependencies, the United States of America, the Continent of Europe, and Abroad of T. Fisher Unwin, London, W.C. Printed by Eyre and Spottiswoode, Limited, East Harding Street, E.C., Printers to the King's Most Excellent Majesty. 1912. Price 1s.

[2] This number includes men temporarily invalided from foreign stations, many of whom are again able to join the active force. The number finally invalided represents the waste of the Service during the year.

Malaria.—413 cases, with 1 final invaliding and 2 deaths, giving a decrease of 1.51 in the case ratio as compared with the average. The East Indies contributes 162 cases, of which the majority of instances of fresh infection were contracted at Bombay, while many were recurrent attacks for short periods in men who had acquired the disease during the landing at Lingah in 1910. On the whole 1911 can be regarded as a good year for malaria on the East Indies Station. The highest case ratios were furnished by this station, 70.43; North America and West Indies, 14.83; China, 9.38; Australia, 9.27; and the Irregular List, 4.58. The total, as usual, includes a large number of relapses, and does not imply that 413 individuals were affected.

Septic Diseases.—34 cases of erysipelas are returned under this heading.

Tuberculosis.—286 cases, with 237 invalidings and 38 deaths. The case, invaliding, and death ratios per 1,000 were 2.44, 2.02, and 0.32 respectively, as compared with 2.73, 2.02, and 0.27, the average ratios for the previous five years. Of the whole number, pulmonary tuberculosis contributed 245 cases, of which 25 proved fatal; joints, 9; testicle, 8; meninges, 4; glands, 4; peritoneum, 3; kidney, 2. There were 6 cases of miliary tuberculosis, all fatal. The remainder were single instances of tuberculous growth of the intestine (which proved fatal), disease of bone, skin, and bladder respectively. The East Indies contributed the highest case ratio and the Home Fleet the lowest.

Venereal Diseases.—The total number of cases recorded is 13,461—namely, chancroid, 2,349; primary syphilis, 658; secondary syphilis, 2,959; gonorrhoea and its sequelae, 7,495. There were 120 final invalidings—namely, 1 for chancroid, 61 for secondary syphilis, and 58 for gonorrhoea and its sequelae. Four cases ended fatally, 3 being due to constitutional syphilis and 1 to sequelae of gonorrhoea. The case, invaliding, and death ratios per 1,000 were 114.92, 1.01, and 0.02 respectively, as compared with 121.23, 1.45, and 0.05, the average ratios for the previous five years. The total number of days' loss of service was 308,917, while the average daily number of men ineffective from these diseases was 846.34—a ratio of 7.21 per 1,000, as compared with 8.01, the average for the preceding five years. The China Station shows the highest case ratio per 1,000 with 147.45, and the Home Station 131.24, while the Cape of Good Hope Station, with 67.57, shows the lowest. The total days' sickness for primary and secondary syphilis is less by 10,477 days than that of 1910, so that the reduction, says the report, anticipated by the use of salvarsan as a treatment is already felt to an appreciable extent.

Rheumatic Fever.—892 cases, with 5 final invalidings and 1 death. The case and invaliding ratios per 1,000 were 7.61 and 0.04 respectively, as compared with 5.83 and 0.56, the averages for the preceding five years. The increase in the case ratio is partly due to the concentration of the Fleet in Home Waters, and to more accurate classification, rheumatic fever and muscular rheumatism being formerly classed as one in the returns. Corresponding with the increase in the case ratio under this head, there is a substantial decrease under "Organs of Locomotion."

Parasitic Diseases.—3,306 cases, of which 3,152 were scabies. The ratio shows a decrease, as compared with the average, of 5.81 per 1,000.

Alcoholism.—83 cases, with 1 final invaliding and 2 deaths, an improvement upon 1909 and 1910, and also as compared with the average for five years.

Poisons.—218 cases, with 5 final invalidings and 7 deaths. Lead poisoning was responsible for 26 cases, and ptomaine poisoning for 150, with 2 of the deaths. Of the remainder, carbon dioxide was the cause in 9 (of which 3 were fatal), coal gas 8, carbon monoxide 4, tobacco (including 3 of tobacco amblyopia) 5, morphine 2, Jatropha Carcas or the "physic nut" of Jamaica 2, iodoform 2, and single cases of poisoning by zinc fumes, cordite fumes, mercury, copaiba, cocaine, turpentine, iodine, corrosive sublimate, chloroform, and jelly-fish sting.

Other General Diseases.—464 cases: 189 of gout, 166 non-malignant and 19 malignant new growths, 10 of diabetes, 57 of anaemia, 8 of beri-beri, 5 of osteo-arthritis, 5 of climatic debility, 2 of leucocythaemia, and solitary cases of splenic anaemia, Hodgkin's disease, and pernicious anaemia. There were 14 deaths from malignant and 1 from non-malignant new growth, 2 from diabetes, 2 from beri-beri, and 1 from pernicious anaemia.

Local Diseases.

Diseases of the Nervous System.—916 cases, with 328 final invalidings and 13 deaths. The case, invaliding, and death ratios are 7.82, 2.79, and 0.1 per 1,000 respectively, as compared with 7.66, 2.44, and 0.12, the average ratios for the preceding five years. "Nervous Diseases" accounted for 835 cases, with 282 invalidings and 12 deaths; and "mental diseases" for 81, with 46 invalidings.

Diseases of the Eye.—908 cases, with 162 final invalidings, mostly errors of refraction.

Other Organs of Special Sense.—830 cases, with 117 invalidings and 6 deaths. Diseases of the ear accounted for 749 cases, 113 of the invalidings, and all the deaths; diseases of the nose for 81 cases, and 4 of the invalidings.

Diseases of the Circulatory System.—728 cases, with 329 final invalidings, and 38 deaths. The case, invaliding, and death ratios are 6.21, 2.8, and 0.32 per 1,000 respectively, as compared with 5.75, 2.00, and 0.33, the average ratios for the preceding five years. Organic heart disease accounted for 253 cases, with 265 final invalidings, and 29 deaths; functional heart disease 195, with 29 final invalidings; aneurysm for 22, of whom 8 died; diseases of veins, 244; and 14 other diseases, of whom 1 died.

Diseases of the Respiratory System.—8,108 cases with 92 final invalidings and 8 deaths. The case ratio shows a decrease of 0.36 per 1,000, as compared with the average for five years. Catarrh furnished 6,867 of the cases; the remainder include 138 of diseases of the larynx, 629 of bronchitis, 304 of pleurisy, 66 of asthma, and 104 of "other diseases."

Diseases of the Digestive System.—13,445 cases, with 141 final invalidings and 29 deaths, giving case, invaliding and death ratios of 114.81, 1.2 and 0.24 per 1,000 respectively, as compared with 104.14, 2.08, and 0.2, the averages for the previous five years. The increase of 10.67 in the case ratio is mainly due, says the report, to the large number of entries returned for minor diseases, sore throat, tonsillitis, and enteritis being exceptionally prevalent on the Home, Mediterranean, and Australia Stations. "Mouth and teeth" diseases accounted for 848 cases, with 3 invalidings; sore throat and tonsillitis for 6,388; gastric and intestinal diseases for 1,388 and 3,504 respectively; hernia for 669, with 86 invalidings, 27 of whom refused operative treatment; haemorrhoids for 440; hepatitis for 54; other diseases of the liver, chiefly catarrhal jaundice, 154. Among the cases under intestinal diseases there are notes of 302 cases of appendicitis, 122 of which were operated upon. The highest case ratios were furnished by the Home Station, East Indies, and Irregular List; the lowest by North America with the Fourth Cruiser Squadron, Home Fleet, and Atlantic Fleet.

Diseases of the Lymphatic and Glandular System.—592 cases with 1 final invaliding and 1 death. Non-venereal bubo accounted for 412 cases. The East Indies, the Cape of Good Hope, and the Irregular List show the highest ratios.

Diseases of the Urinary and Generative System.—906 cases, with 89 final invalidings and 14 deaths. Renal diseases, mainly various forms of nephritis, accounted for 13 of the deaths and a majority of the invalidings, but a considerable number of persons were also invalided for incontinence of urine.

Diseases of the Organs of Locomotion.—1,516 cases with 72 final invalidings. The case ratio is 12.94 per 1,000, as compared with 17.31, the average for the preceding five years, the decrease corresponding with the apparent increase under the heading "rheumatic fever." Diseases of joints accounted for 15 invalidings, but the majority were called as "other diseases," the commonest cause being flat-foot.

Diseases of the Connective Tissue and Skin.—8,923 cases, with 14 final invalidings and 2 deaths. The case ratio varied from 140.86 in the East Indies to 63.61 and 65.19 in the Home Station and Home Fleet respectively.

Injuries.

(*a*) *General.*—331 cases, with 3 final invalidings and 68 deaths, the case and invaliding ratios being nearly identical, and the death ratio slightly decreased as compared with the averages. The deaths were due to: Drowning, 43; burns and scalds, 2; heat-stroke, 4; caisson disease, 1; asphyxia, 4, 2 of whom were due to the inhalation of vomited liquid when drunk ashore; suffocation, 2. Three cases of caisson disease were recorded, and 211 of heat-stroke.

(*b*) *Local.*—15,950 cases, with 111 final invalidings and 26 deaths, giving case, invaliding and death ratios of 136.2, 0.94, and 0.22 per 1,000 respectively, as compared with 142.06, 1.17, and 0.16, the average for the previous five years. Under the heading, "Burns and Scalds," 1,280 cases are classed, and 14,670 under "Injuries."

(*c*) *In Action.*—Three wounds in action are recorded. Two of the entries, however, refer to one man, who was wounded when a punitive party was landed from the

Torch in the Soloman Islands, and the other occurred in the Persian Gulf during the operations against gun-runners.

Suicide.

Twelve deaths are returned under this heading, 4 each by cut-throat and by drowning, 2 by gunshot, 1 each by hanging and by jumping into a dry dock.

Papers.

An appendix to the report contains an interesting communication on Yangtzse Fever, by Surgeon W. Harold Edgar, M.B. A case of bullet wound of posterior tibial artery is recorded by Staff Surgeon J. Martin. Fleet Surgeon P. W. Bassett-Smith, C.B., R.N., contributes a paper on the serum diagnosis test for syphilis at Haslar during 1911. Fleet Surgeon R. H. J. Browne reports a case of plague at Shotley. The Royal Navy is to be congratulated on the continuous improvement in the health of the force shown by the report, and the papers are a proof of the professional efficiency of the medical officers.

ARMY MEDICAL SERVICE.

THE Secretary of the War Office announces that the appointment of Director-General, Army Medical Service, will in future be tenable for four years, as in the case of other staff appointments at army head quarters, instead of for three years, as hitherto. Surgeon-General Sir W. L. Gubbins, K.C.B., whose tenure was due to expire on March 6th, will, therefore, continue in his appointment of Director-General, Army Medical Service, until March 6th, 1914.

Medico-Legal.

WORKMEN'S COMPENSATION.

Appendicitis and Accident.

IN the case Brewster *v.* Bradford and Co. (Stafford, December 6th, 1912) it appeared that the deceased workman had been employed by the respondents, and had visited the County Asylum to obtain particulars prior to his firm submitting a tender to do certain work. While there he fell from a ladder a distance of 13 ft., and afterwards complained of having received an injury. The question at issue was the connexion between this fall and the man's death, which took place some time later. An operation was performed on the deceased at Leeds Infirmary for appendicitis, and a tin-tack was found in the appendix. Medical evidence was called on behalf of both applicant and respondent.

His Honour said that both he and the medical referee agreed that it was a case of appendicitis caused by a foreign body being in the appendix, but they were not satisfied that death was brought on by the fall "lighting up" the tin-tack. Judgement would therefore be for the respondents. Costs were not asked for.

Medical News.

DR. PERCY E. ADAMS has been presented by his patients and friends with a handsome pair of silver candlesticks suitably inscribed and a cheque on leaving Hartley Wintney, where he was in practice for eleven years.

THE Gresham Professor of Physic, Dr. F. M. Sandwith, will continue his lectures on the relief of the sick and wounded in war on Tuesday, January 28th, and the three following days. The lectures will be given at the City of London School, Victoria Embankment, at 6 p.m. each day, and are free to the public.

AT the request of the Council of the Pharmaceutical Society of Great Britain, Professor R. T. Hewlett, M.D., will give a course of three lectures on microbiology and pathological chemistry and microscopy in relation to the pharmacist in the lecture theatre of the Society at 8 p.m. on Wednesdays, January 22nd, February 19th, and March 19th.

MR. E. HURRY FENWICK, F.R.C.S., Professor of Urology, and Consulting Surgeon to the London Hospital, will give a course of three lectures on the haematogenous infections of the kidney in the clinical theatre of the hospital on Monday, Wednesday, and Friday, January 20th, 22nd, and 24th, at 1.30 p.m. The attendance of members of the medical profession and medical students is invited.

THE *Times* states that the executive committee of the Liberal Association of the Harborough Division of Leicestershire has decided to recommend the name of Sir Victor Horsley for adoption as Liberal candidate on the retirement of Mr. J. W. Logan, which will take place at the next general election. Sir Victor Horsley contested London University in 1910, when he was defeated by Sir Philip Magnus. He was adopted for North Islington in 1911.

THE Metropolitan Asylums Board, on January 11th, received a letter from the Local Government Board approving the arrangements proposed to be made at the Downs School for the conversion of the premises into a tuberculosis sanatorium in co-operation with the London County Council. It was announced that in future the institution would be known as the Darenth Sanatorium. The cost of alterations to the premises was stated to be £1,645; this will be borne by the London County Council.

WE are informed by the Imperial Merchant Service Guild that it has drawn the attention of the Board of Trade to a letter from Dr. Edridge-Green which appeared in our issue for January 4th, and has expressed a hope that a previous omission will be rectified by the Board taking advantage of an offer made by Dr. Edridge-Green at the time the committee on colour blindness was sitting. The Board of Trade at present proposes to classify colour blindness by measuring the luminosity of the colour sensation by the flicker method, but Dr. Edridge-Green is prepared to show by actual cases that this method may result in a colour blind person being returned as normal and a normal person as colour blind.

THE Local Government Board has issued a circular to port and riparian sanitary authorities calling attention to the fact that cholera is now prevalent in and around Constantinople and in a number of districts and ports in Asia Minor and Syria, and is severely epidemic in Mecca and Hedjaz, from which pilgrims are now returning to Turkey, Egypt, and Southern Europe. It is hoped that the statement issued weekly by the Board to medical officers of health of port and riparian sanitary authorities, which contains information as to such cholera occurrences as come under notice, will be of assistance in enabling them to keep themselves informed as to the spread of the present outbreak of cholera. Reference is made to the General Order issued on September 9th, 1907, relating to cholera, yellow fever, and plague on ships arriving from foreign ports.

A CURIOUS case has just been decided in the Saxon medical ethical courts. A certain specialist for skin and venereal diseases had employed a lay assistant for a number of years. This man was sentenced to imprisonment for an unnatural offence in 1910. A complaint was lodged against the specialist for continuing to employ the man after having become aware of the nature of his habits. The local court dismissed the charge, but the matter was referred to the court of appeal, which reversed the findings of the lower court, holding that, inasmuch as the man was brought into close contact with patients in carrying out inunction and other forms of treatment, the patients were exposed to an unwarrantable risk, and further that the knowledge of the facts would tend to lower public respect for the profession. The court of appeal, however, holding that the specialist only continued to employ the man out of pity, did not pass any sentence and did not require the defendant to pay costs.

A QUARTERLY court of the directors of the Society for Relief of Widows and Orphans of Medical Men was held on January 8th, the President, Sir Thomas Boor Crosby, in the chair. Sixteen directors were present. Two gentlemen were elected members of the society, and it was reported that three members had died since the last court. The sum of £514 was paid in December, 1912, as a Christmas present to the widows and orphans in receipt of grants, each widow receiving £10, each orphan £3, and each orphan on the Copeland Fund £10. This grant is in addition to the usual half-yearly grants. The invested funds of the society now amount to £101,600; £1,313 10s. was voted for the payment of the half-yearly grants. An application for relief was received from the widow of one of the members on behalf of herself and five orphans; her late husband had paid in subscriptions £16 16s. The court voted a grant at the rate of £50 per annum for the widow and £20 per annum for each orphan, making a total grant of £150 per annum. In addition, the widow will probably receive at Christmas £10, and each orphan £3, bringing the total amount she will receive from the society up to £175 per annum. A more striking example of the advantages of joining the society can hardly be shown. Membership is open to any registered medical practitioner who at the time of his election is resident within a twenty-mile radius of Charing Cross. The annual subscription is two guineas. Special terms for life membership. Further particulars and application forms for membership may be obtained from the Secretary at the offices of the Society, 11, Chandos Street, Cavendish Square, W.

Universities and Colleges.

UNIVERSITY OF CAMBRIDGE.

THE following candidates have been approved at the examinations indicated:

D.T.M.H.—A. B. Arora, F. D. Bana, J. A. Beattie, G. Browse, de Vere Condon, A. da Gama, S. H. Daukes, G. E. Dodson, P. J. S. Dunn, A. E. A. Ismail, R. K. Mhatré, A. Moore, A. K. Sinha, W. C. P. Winter.

UNIVERSITY OF LONDON.

Examinations.

THE following candidates have been approved at the examination indicated:

FIRST M.B.—C. C. Agarwala, G. N. Anderson, K. N. G. Bailey, J. R. Banks, Grace M. Beaven, ‡H. F. G. Berncastle, A. B. Bond, G. W. J. Bousfield, T. Carlyle, P. C. L. Carrier, O. C. Carter, P. S. Clarke, C. G. Coombs, R. C. Davenport, G. Day, *†J. D. Dyson, G. W. Elkington, C. F. Eminson, G. H. FitzGerald, L. B. Goldschmidt, Iris Harding, G. W. Heckels, *W. A. Hewitson, E. A. Holmes, C. A. Hutchinson, J. W. D. Hyde, J. Joffe, D. M. Jones, V. E. Jones, M. H. K. Kane, G. E. Kidman, E. E. Lightwood, Marguerite F. J. Lowenfeld, Ethel M. McCartney, R. G. Mack, T. E. Malins, H. I. Marriner, P. N. Menon, J. O. R. Montocchio, A. Morford, M. Munir, ‡N. Olivier, Irene G. Parsons, V. J. E. C. del S. Perez y Marzan, E. S. Phillips, Sybil M. G. Pratt, T. D. Pratt, S. H. de G. Pritchard, C. N. Read, J. B. Reed, F. E. Rendel, P. G. Riggall, H. B. Russell, M. Shimberg, Ellen Sylk, A. A. Thiel, N. B. Thomas, K. R. Traill, K. T. K. Wallington, R. E. S. Webb, A. D. Weeden, A. W. Wells, Effie A. Wharton, G. S. Wilson, W. F. P. Wilson, Sik To Wong, C. Young.

* Awarded a mark of distinction in Inorganic Chemistry.
† Awarded a mark of distinction in Physics.
‡ Awarded a mark of distinction in Biology.

LONDON (ROYAL FREE HOSPITAL) SCHOOL OF MEDICINE FOR WOMEN.

Scholarships and Bursaries.

A bequest has been received from the late Miss Mabel Sharman-Crawford to found a scholarship to bear her name. The scholarship, offered annually, of the value of £20 a year for four years, will be awarded for the first time in July, 1913, on the result of an examination in biology, chemistry, and physics. Other scholarships to be awarded in July, 1913, are the Isabel Thorne Scholarship, value £30, and the St. Dunstan's Exhibition, value £60 a year for three or five years. The Agnes Guthrie Bursary for Dental Students, value £60, and the Mabel Webb Research Scholarship, value £30 a year for one, two, or three years, will be awarded in September, 1913. The Dr. Edith Pechey-Phipson Post-graduate Scholarship of the value of £40 will be awarded in June, 1913. Full particulars can be obtained from the Secretary of the Medical School, 8, Hunter Street, W.C.

Gifts.

Valuable gifts have recently been received for the Library from the Worshipful Company of Clothworkers and Sir Montagu Turner, for apparatus from Mr. Alfred Langton and Dr. Florence Stoney, and for bursaries from Mrs. Anstruther and Dr. Eleanor Lowry.

UNIVERSITY OF EDINBURGH.

ANNUAL REPORT FOR 1912.

Numbers of Students.

DURING the past year the total number of matriculated students (including 572 women) was 3,404. Of these, 466 (including 25 women) were enrolled in the Faculty of Science, 1,330 (including 6 women) in the Faculty of Medicine. The numbers in the Faculties of Arts and Medicine show a small reduction, but the number of students in the Faculty of Science is the best ever reached, exceeding by 40 that for 1911, and by 84 that for 1910. Of the students of medicine, 591, or over 44 per cent., belonged to Scotland; 228, or over 17 per cent., were from England and Wales; 95 from Ireland; 102 from India; 265, or 20 per cent., from British colonies; and 49 from foreign countries. The number of women attending extra-academical lectures, with a view to graduation in medicine in the university, was 69.

Degrees Conferred, Etc.

The following degrees were conferred during 1912: Bachelor of Science (B.Sc.), 71 (the highest number ever reached); Doctor of Science (D.Sc.), 4; Bachelor of Medicine and Master in Surgery (M.B., C.M.), 2; Bachelor of Medicine and Bachelor of Surgery (M.B., Ch.B.), 201; Doctor of Medicine (M.D.), 55.

The General Council of the University now numbers 11,941.

The Diploma in Tropical Medicine and Hygiene was conferred on one candidate; the Diploma in Psychiatry on four candidates.

Scholarships, Etc.

The total annual value of the University Fellowships, scholarships, bursaries, and prizes now amounts to about £19,420, and includes: In the Faculty of Science, £1,190; in the Faculty of Medicine, £5,230. A number of bursaries are in the gift of private patrons, but the great majority of the university bursaries, prizes, etc., are awarded by the Senatus after competitive examination. In addition to the above, a sum of upwards of £660, being the income of the Earl of Moray Endowment Fund, is annually available for the encouragement of original research.

Lectureships, New Courses, Etc.

During the year six new lectureships have been instituted by the University Court, and the courses are being delivered in the current session. Of these there are as follows: Neurology—J. J. Graham Brown, M.D.; Physical Methods in the Treatment of Disease—Harry Rainy, M.A., M.D.; Physical Optics—J. R. Milne, D.Sc. A second Lecturer upon Diseases of the Skin has also been appointed in the person of Dr. Frederick Gardiner.

New Ordinances, Etc.

Early in the year the sanction of His Majesty in Council was given to the Ordinance of the University Court of the University of Edinburgh, No. 13 (Institution of Degrees in Veterinary Science, and relative Regulations). The Court's Ordinance, No. 14 (Foundation of Chair of Bacteriology), has been submitted to the King in Council and laid before Parliament. The foundation of the new Chair is due to a munificent bequest, intimated several years ago, by Mr. Robert Irvine, of Royston, Granton, for this purpose. The sum in the hands of the trustees has been allowed to accumulate until it has reached £30,000, and it is available not only for the founding of the Chair, but also for the equipment of a class-room and laboratory connected therewith. A draft Ordinance has also been framed for the foundation of the Moncrieff Arnott Chair of Clinical Medicine.

New Buildings.

The year just closed has seen the completion of a portion of the western annexe of the physical laboratory, a suite of rooms having been so fitted up as to provide accommodation both for the laboratory work of the Medical Physics Class and for the tutorial work of the Natural Philosophy Class.

Benefactions, etc.

As in former years, the university has to make grateful acknowledgement of numerous benefactions. Among others may be noted a sum of about £1,200, being the residue of the estate of the late Mr. John Bruce, M.B., C.M., of Kirkwall, for the foundation of a bursary in the Faculty of Medicine, to be called the "Whiteside Bruce Bursary"; and a sum of £33 7s. 2d. subscribed by medical practitioners in the Straits Settlements to provide a medal in the subject of tropical diseases. A highly interesting and much-prized donation has also come to the university by the bequest of the late Lord Lister (at one time Professor of Clinical Surgery in the University), of his orders and medals, the caskets presented to him in connexion with the conferring upon him of the freedom of London, Edinburgh, and Glasgow, and the numerous diplomas and congratulatory addresses received by him at various times from British and foreign learned societies, together with his portrait, painted by Mr. J. H. Lorimer. All of these have been placed in the university library.

Miscellaneous.

Inclusive fees have been instituted in the Faculty of Arts, in the Faculty of Science (Department of Pure Science), and in the Faculty of Law, to apply to those who are studying with a view to graduation in these faculties.

ROYAL COLLEGE OF SURGEONS OF ENGLAND.

A QUARTERLY Council was held on January 9th, Sir Rickman J. Godlee, Bart., President, in the chair.

Votes of Thanks to Donors.

The thanks of the Council were given to Mr. Harold Peake, of Westbrook House, Newbury, Berks, for his gift of a collection of skulls and skeletons of Anglo-Saxons of the seventh century, found near Newbury. Likewise to Mr. H. E. Juler, for a gift of 150 specimens illustrating injuries and diseases of the eye, and to Dr. T. Colcott Fox for presenting a series of cultures of ringworm fungi.

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Letters, Notes, and Answers.

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CORRESPONDENTS not answered are requested to look at the Notices to Correspondents of the following week.

CORRESPONDENTS who wish notice to be taken of their communications should authenticate them with their names—of course not necessarily for publication

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2634, Gerrard, MEDICAL SECRETARY.

☞ *Queries, answers, and communications relating to subjects to which special departments of the* BRITISH MEDICAL JOURNAL *are devoted will be found under their respective headings.*

QUERIES.

PINELAND asks for the details of Van Noorden's treatment of constipation, or for reference to some work in English giving these details.

MAC asks for suggestions in the treatment of a lady of 70 who has lost appreciation of touch in her fingers. On taking hold of an object it feels as if it were something else or that something has been introduced between the finger and the object. No neurotic element is present. Treatment for gout ineffectual. Would, he asks, constant current be of any use; if so, how should it be applied?

A. M. asks for suggestions in the treatment of the two following cases: (1) A multipara is much troubled with severe after-pains, so severe as to be agonizing every few minutes for the first few days; no clots are passed; she is dreading another confinement because of this. (2) A female patient, aged 37, has been troubled for about twenty years with excessive sleepiness at the wrong time; the total amount of daily sleep is not too much, but sleep commences about seven o'clock each evening, then she is unable to sleep in the early hours of the morning.

X Rays and Pruritus Ani.

SHERWOOD asks for experience regarding the treatment of pruritus ani by means of the *x* rays and whether there is danger of any of the surrounding organs becoming atrophied. He has under treatment a case of ten years' standing.

Daily Drugging.

FINCH asks if any unpleasant symptoms are known to be associated with the daily taking of a small dose of liquid paraffin for constipation.

JUNIUS asks if injurious effects have been known to follow the taking of sodium bicarbonate in 30-grain doses every four hours over a prolonged period in a case of gastric hyperacidity. He wishes to know whether the alkalinity of urine so produced has any bad effects on the urinary system, and whether some form of magnesia would not be better, and, if so, what preparation.

Income Tax.

CALCULUS has recently secured an appointment at a salary of £300; previously he was earning about £90 a year. He desires to know whether he is entitled to be assessed on the average of three years.

*** If the appointment represents our correspondent's sole source of professional income, the average does not apply, and he should be assessed for the current year on the amount of salary receivable for the period up to April 5th next, with an addition for his earnings during the period from April 5th last to the date of appointment. The usual allowance of £160 will be due from the total assessment if his income from all sources be under £400.

ANSWERS.

DR. W. LONGWORTH WAINWRIGHT (Henley-on-Thames) writes: "A." will find that a dose of 1 or 2 grains of potassium permanganate in a glass of soda water is a simple and certain cure if taken on an empty stomach.

DR. BRAMWELL (Liverpool) writes: In answer to "A.," a probable cause of offensive breath is offensive secretion blocking crypts in the tonsils. This secretion is sometimes so deeply placed as to be quite out of sight of an ordinary examination. Slight loss of tone in the soft palate will sometimes cause food to lodge behind it, in the neighbourhood of the posterior nares, and so undergo decomposition. Also powerful eructations from the stomach will sometimes drive up small particles of food to lie in the same position. Loss of muscular tone may also cause food to lodge in either sinus pyriformis at the upper extremity of the œsophagus. Attention to such causes might result in cure. Enucleation, tonics, strychnine, electricity, etc.

Iodine as a Skin Antiseptic.

MR. J. LIONEL STRETTON (Senior Surgeon, Kidderminster Infirmary and Children's Hospital) writes: In reply to Mr. Vaughan Pendred, I would point out that the deep suppuration he mentions had probably no connexion with the condition of the external skin. From his brief account it appears that the skin healed. There are so many other sources of infection that it is hardly fair to describe occasional cases of suppuration as failure of the iodine method as originated by me. In ventrifixation operations it is easy to get an infection from the sutures in the uterus. I am preparing a further contribution on the subject of iodine sterilization in which I deal with this question.

LETTERS, NOTES, ETC.

Poisoning by Arsenic in Carpets.

IN a note upon cases of poisoning traced to arsenic in carpets published in the BRITISH MEDICAL JOURNAL, November 30th, 1912, p. 1570, founded upon observations made in Germany by Dr. Kuttner and reported by him to the Hufeland Society (*Berl. klin. Woch.*, 1912, No. 45) it was stated on his authority that arsenic was used in the manufacture of cheap linoleum. We have received from Messrs. Barry, Ostlere, and Shepherd, Ltd., of Kirkcaldy, a letter stating that this statement is incorrect, either as regards cheap or dear linoleum, except in so far as some of the raw materials employed may contain the merest trace of that substance. Messrs. Barry state that some time ago analyses were made by the Edinburgh city analyst, Mr. J. Falconer King, and in their own laboratories on standard samples of their goods, and the result was to show that the amount of arsenic present was not more than 0.17 mg. of metallic arsenic per 50 sq. cm., a quantity which it is considered would be quite incapable of exercising a deleterious influence on the users of an apartment in which the linoleum was laid.

"Gluten Bread."

MESSRS. CALLARD AND CO. (Regent Street, London, W.) write: We notice in your review of a French "manual on nutrition" (January 11th, p. 76), that a statement is made in reference to the starch-content of gluten bread. The reference to a statement by our late principal prompts us to explain that the term "Gluten Bread" has ceased to be applied to any standard preparation. All bread made from wheat flour contains some gluten, and this fact seems to justify the name of "Gluten Bread" being applied to any white bread. Many so-called gluten breads contain as much as 55 per cent. of starch, and are, therefore, no better than ordinary bread for the use of diabetic patients, although much more expensive. We have made for many years a gluten bread, containing not more than 7 per cent. of starch, but it is not palatable, although eatable. Gluten bread of any kind is out of date; it has been superseded by the newer breads made from casein, eggs, and butter, which are palatable and absolutely free from carbohydrate. Our experience shows that physicians prefer to treat their patients with these starch-free breads, and give a definite weight of potato or ordinary bread at each meal when they desire to administer carbohydrate. This is more accurate than ordering any so-called palatable "Gluten Bread" which may contain any proportion of starch from 30 to 55 per cent.

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